TC-K222ESA/K890ES

SERVICE MANUAL

US Model
Canadian Model
Germany Model
TC-K890ES

E Model
TC-K222ESA/K890ES

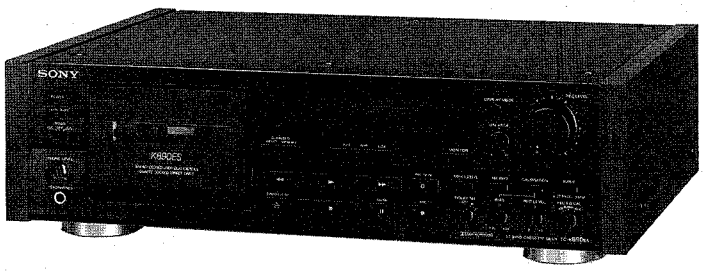

Photo : TC-K890ES

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
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Model Name Using Similar Mechanism	TC-K222ESG
Tape Transport Mechanism Type	TCM-200D10

SPECIFICATIONS

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 90 sec. (with Sony C-60 cassette)
Bias	AC bias
Heads	Erasing head × 1 (S&F head) Recording head × 1 (LA head) Playback head × 1 (LA head)
Motors	Capstan motor × 1 (direct - drive linear torque BSL motor) Reel motor × 1 (DC motor)
Wow and flutter	± 0.04% W.Peak (IEC) 0.024% W.RMS (NAB) ± 0.065% W.Peak (DIN)

Signal-to-noise ratio (at peak level)

Cassette (Dolby NR OFF)	Type IV (Sony Metal-S/Select)	Type II (Sony UX-S)	Type I (Sony HF-S)
	61 dB	59 dB	57 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion
0.4% (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
1.3% (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (DOLBY NR OFF)

Type IV cassette (Sony Metal-S/Select)	20 - 22,000 Hz (±3 dB, IEC) 20 - 16,000 Hz [±3 dB, (-4 dB recording)]
Type II cassette (Sony UX-S)	20 - 20,000 Hz (±3 dB, IEC)
Type I cassette (Sony HF-S)	20 - 17,000 Hz (±3 dB, IEC)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 k ohms
CD DIRECT INPUT	Input impedance	47 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phone jack)	Output level	0 - 3 mW at a load impedance of 32 ohms

General

Power requirements	US, Canadian model: 120 V AC, 60Hz Germany model: 220 – 230 V AC (or 240 V AC adjustable by Sony personal), 50/60 Hz E model: 120, 220 or 240 V AC adjustable, 50/60 Hz
Power consumption	23 W
Dimensions	Approx. 470 × 135 × 350 mm (w/h/d) (18⅝ × 5⅜ × 13⅞ inches) including projecting parts and controls
Weight	Approx. 8.1 kg (17 lbs 14 oz)

Supplied accessories
Audio connecting cords (2)
Screws (4)
Wireless remote commander RM-J701 (1)*
Sony SUM-3 (NS) batteries (2)*

*Not supplied with model for Canada and European countries.

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

STEREO CASSETTE DECK

SONY®

TC-K222ESA is successor model for TC-K222ESL.
TC-K890ES is successor model for TC-K870ES.
This service manual described only the difference for these new models. Please refer TC-K222ESL/K870ES service manual (9-956-281-11) for detail informations.

Notice of main change

1. The circuit description and electrical adjustment is difference due to change of output levels.
2. Cabinet and cabinet appearance.

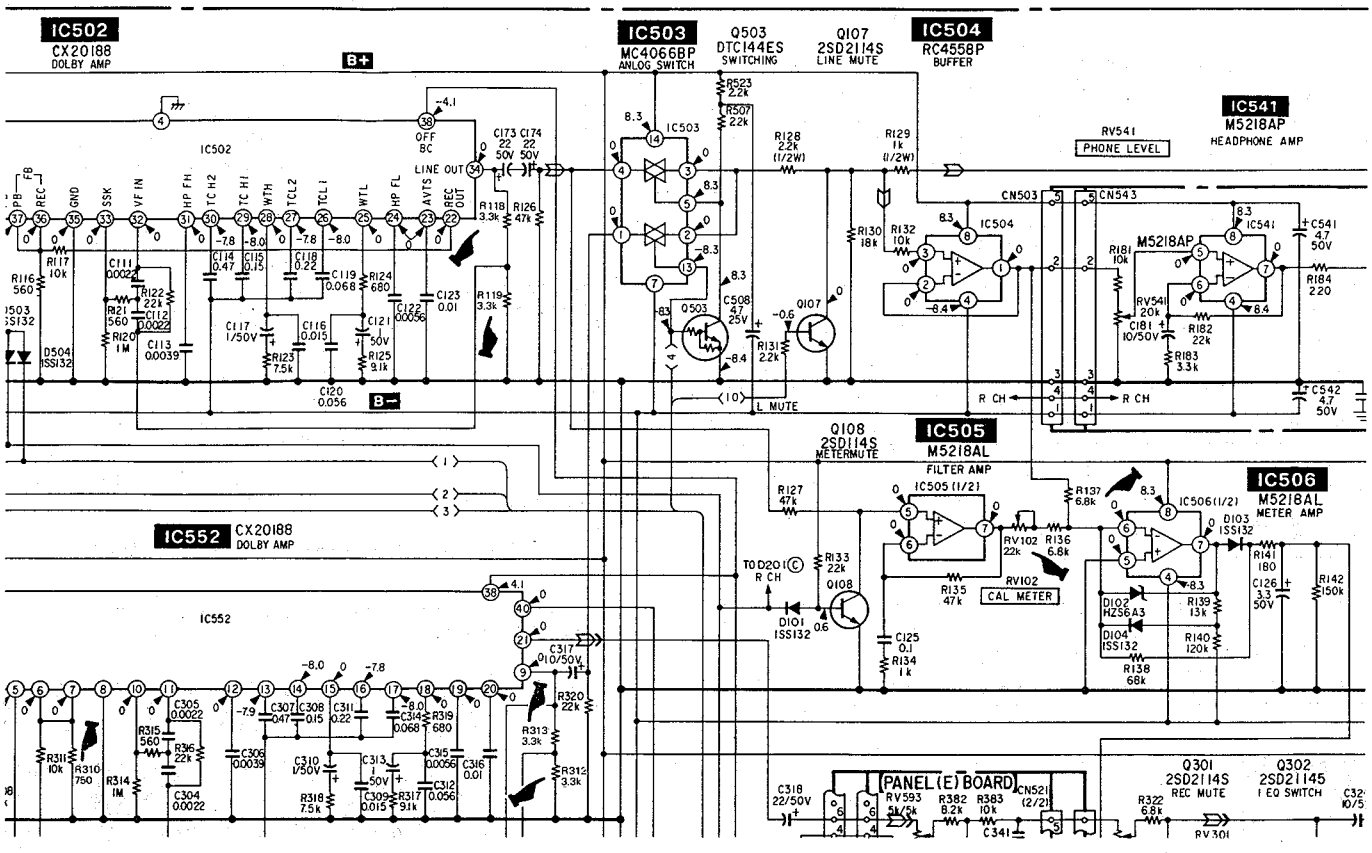
SCHEMATIC DIAGRAM DIFFERNCE DESCRIPTION

	TC-K222ESL	TC-K222ESA/ K890ES
Ref. No.	Description	Description
R118/ 218	CARBON 5.1K 5% 1/4W	CARBON 3.3K 5% 1/4W
R119/ 219	CARBON 2.7K 5% 1/4W	CARBON 3.3K 5% 1/4W
R137/ 237	CARBON 9.1K 5% 1/4W	CARBON 6.8K 5% 1/4W
R310/ 410	CARBON 430 5% 1/4W	CARBON 750 5% 1/4W
R312/ 412	CARBON 2.7K 5% 1/4W	CARBON 3.3K 5% 1/4W
R313/ 413	CARBON 5.1K 5% 1/4W	CARBON 3.3K 5% 1/4W
RV102/ 202	ADJ, CARBON 47K (CAL METER)	ADJ, CARBON 22K (CAL METER)

SECTION 1
DIAGRAMS

SCHEMATIC DIAGRAM

☛ : Difference position



SECTION 2
ELECTRICAL ADJUSTMENTS

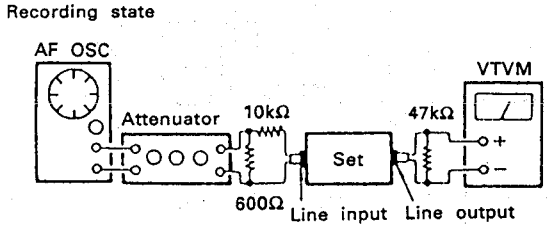
• **Refer to page 6 for Adjustment Location.**

1. Adjust the following in the order of listing. (Adjust the recording system after completion of adjusting the playback system, in general.)
2. Adjustments and measurements should be performed for each channel unless otherwise noted.
3. For simultaneous recording/playback, input a signal into the line and set the equipment to recording state to change the monitor to the tape, immediately playback the recorded signal and issue it from the line output.

- **Switch position**

DOLBY NR	OFF
MPX FILTER	OFF
TIMER	OFF
MONITOR	TAPE
HX PRO	OFF
CALIBRATION	OFF
CD DIRECT	OFF
BIAS	CENTER CLICK
REC LEVEL	CENTER CLICK
BALANCE	CENTER CLICK

- **Specified recording position**
  Adjust knobs REC LEVEL (RV591) and BALANCE (RV592) so that the following specified input/output signal level are obtained.



Specified input level

Input terminal	LINE IN
Signal source impedance	10kΩ
Input signal level	0.25V (−10dB)

Specified output level

Output terminal	LINE OUT
Load impedance	47kΩ
Output signal level	0.44V (−5dB)

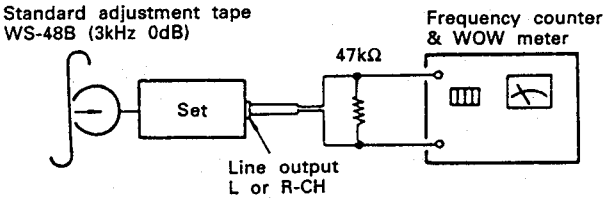
Torque Adjustment

1. Set the torque measuring tape CQ-102C and set the equipment to playback state. Adjust RV801 so that the torque meter indicates 40 ± 3 g.cm.
2. After the completion of the adjustments, measure back tension and FF/REW torques and check that the following specifications are satisfied.

Torque	Torque meter	Meter reading
FWD	CQ-102C	37 - 43g·cm
FWD back tension	CQ-102C	8 - 10.5g·cm
FF/REW	CQ-201B	70 - 120g·cm

Tape Speeds/Wow Checking

Procedure:



1. Playback the top section of the standard tape and measure its output frequency and WOW value.
2. Turn the standard tape upside down, measure the same values and check differences between both measured values. (Difference between the top and the end of the tape)

Adjustable limits:

TAPE SPEED deviation : 2,990 - 3,010 Hz or less
TAPE SPEED variation width : 2,990 - 3,010 Hz or less
WOW (WRMS) : 0.04% or less

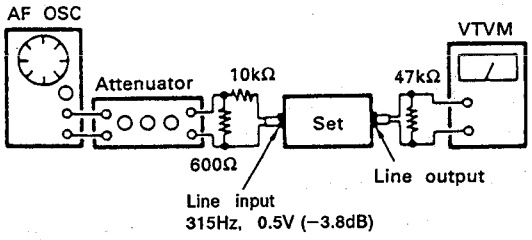
MPX Filter Checking

Conditions:

DOLBY NR switch : OFF
MPX FILTER switch : OFF

Procedure:

1. Mode: Stop state



2. Apply the signal of 315Hz, 0.5V (−3.8dB) and set REC LEVEL and BALANCE so that the line output level becomes 0.5V (−3.8dB).
3. Apply the signal of 19kHz, 0.5V (−3.8dB) and measure the line output level.

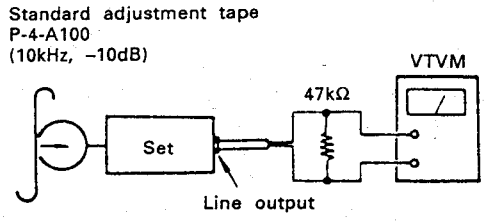
Adjustable limits:

DOLBY NR switch: B or C
MPX FILTER switch: Line output level upon ON
315Hz: Within 0.45 to 0.56V (within −2.8 to −4.8dB)
19kHz: 0.015V (−33.8dB) or less

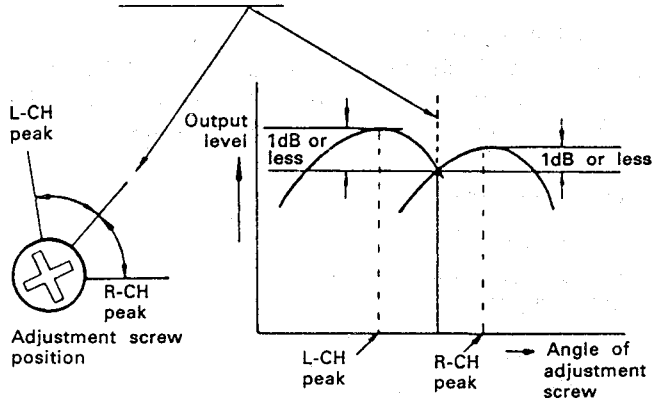
Record/Playback Heads Vertical Adjustment

Procedure:

1. Mode: Playback

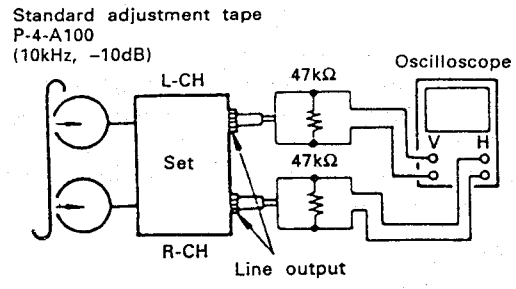


2. Adjust the adjustment screws so that L-CH and R-CH outputs become maximum. If the maximum output points of L-CH and R-CH do not coincide, adjust the screws so that the outputs agree with each other within 1dB from the maximum output value in each channel.

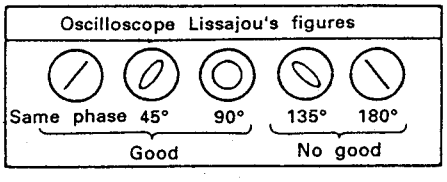


3. Checking of phases

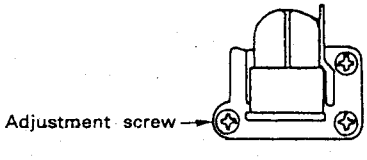
– Playback state –



4. Check that the difference between L-CH and R-CH phases is in the same phase - 90°.



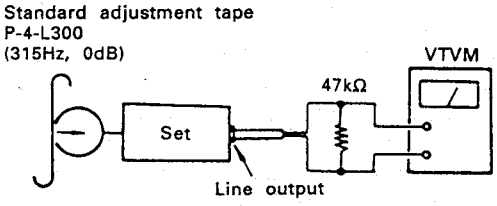
Adjustment Location:



Playback Level Adjustment

Procedure:

1. Playback state



Adjust RV101 (L-CH) and RV201 (R-CH) to satisfy the following specifications.

Adjustable limits:

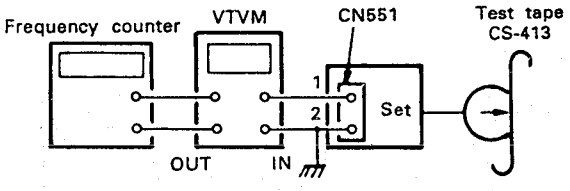
Line output level: 0.30 to 0.33V
(−7.2 to −8.2dB)

Level difference between channels: 0.5dB ot less Check that, by repeating playback and stop, the line output level does not change.

Erase Current Adjustment

Procedure:

1. Mode: record



2. Adjust RV553 so that VTVM indicates 110mA (erase current 110mA).
3. Check oscillation frequency at that time.

Adjustable limits:

Erase current: 110 $^{+0}_{-5}$ mA

Oscillation frequency: 160 ± 6kHz

Bias Consumption Current Adjustment

Precautions:

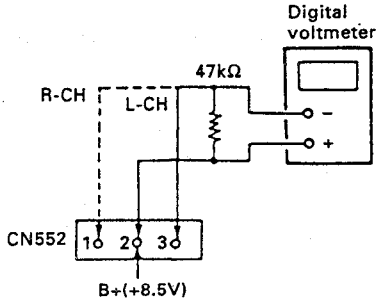
Be sure to adjust bias consumption currents before adjusting recording bias. After completion of adjusting bias consumption currents, again adjust recording bias.

Condition:

HX PRO switch: ON

Procedure:

1. Set the semi-fixed resistances RV303 (L-CH) and RV403 (R-CH) for the adjustment of recording bias and RV554 at a mechanical center and set the equipment to recording state without signals.
2. Adjust T301 (R-CH) and T401 (L-CH) so that the digital voltmeter indicates a minimum value.



Adjustable limits:

120mV or less
(When measured using CS-413 after completion of adjusting the bias)

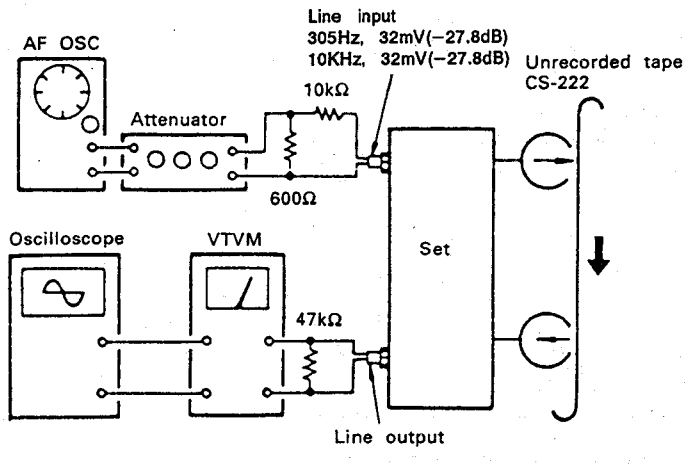
Bias and Recording Level (HX PRO ON) Adjustment

Conditions:

REC LEVEL knob: Specified recording position (see Page 3)
HX PRO switch: ON

Procedure:

. Simultaneous record/playback state



. In order that the minimum output becomes the specified output level:

1) Adjust RV303 (R-CH) and RV403 (L-CH).
.....Bias adjustment

2) Adjust RV301 (R-CH) and RV403 (L-CH).
.....Recording level adjustment

Adjustable limits:

(1) Difference of 10kHz level from 315Hz level: ±0.3dB
(2) Level of 315Hz: −27.5dB to −28.1dB

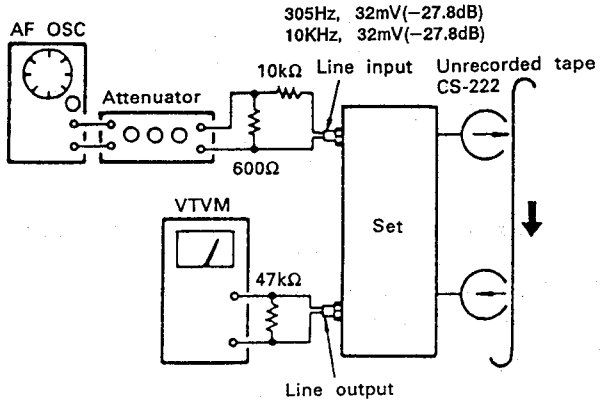
Bias Adjustment (HX PRO OFF)

Conditions:

REC LEVEL knob: Specified recording position (see Page 3)
HX PRO switch: OFF

Procedure:

1. Simultaneous record/playback state



2. Adjust RV302 (L-CH) and RV402 (R-CH) so that the difference between playback outputs of 10kHz and 315Hz becomes 0.2 ± 0.3dB.

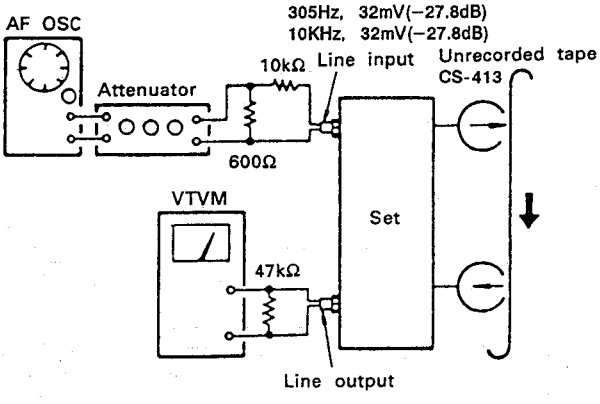
METAL bias Adjustment

Conditions:

REC LEVEL knob: Specified recording position (see page 3)
HX PRO switch: OFF

Procedure:

1. Simultaneous record/playback state



2. Adjust RV554 so that the difference of the playback output of 10kHz R-CH from the playback output of 315Hz becomes ±0.3dB.

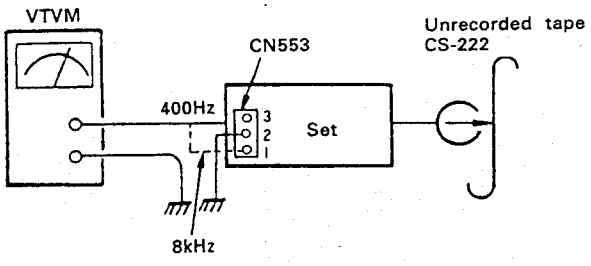
CALIBRATION and Level Meter Adjustment

Condition:

CALIBRATION switch: ON

Procedure (oscillation output level):

1. Recording state (no line input signals)

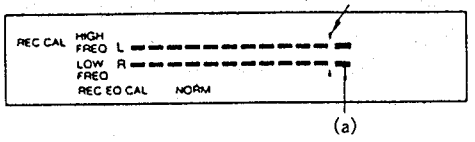


2. Adjust RV551 so that the level of the 400Hz check point becomes 9.5dB - 10.5dB.
3. Adjust RV552 so that the level of the 8kHz check point becomes 9.5dB - 10.5dB.

Procedure (level meter adjustments):

1. Recording state (no line input signals)
2. Set RV202 rather high and gradually decrease the level. Set the knob at a point where the level (a) 1 point higher than 0dB of the LOW FREQ segment (in the lower line) in the CAL level meter goes out.
3. Adjust RV102 so that HIGH FREQ segments (in the upper line) of the CAL level meter light up completely up to the 0dB position.

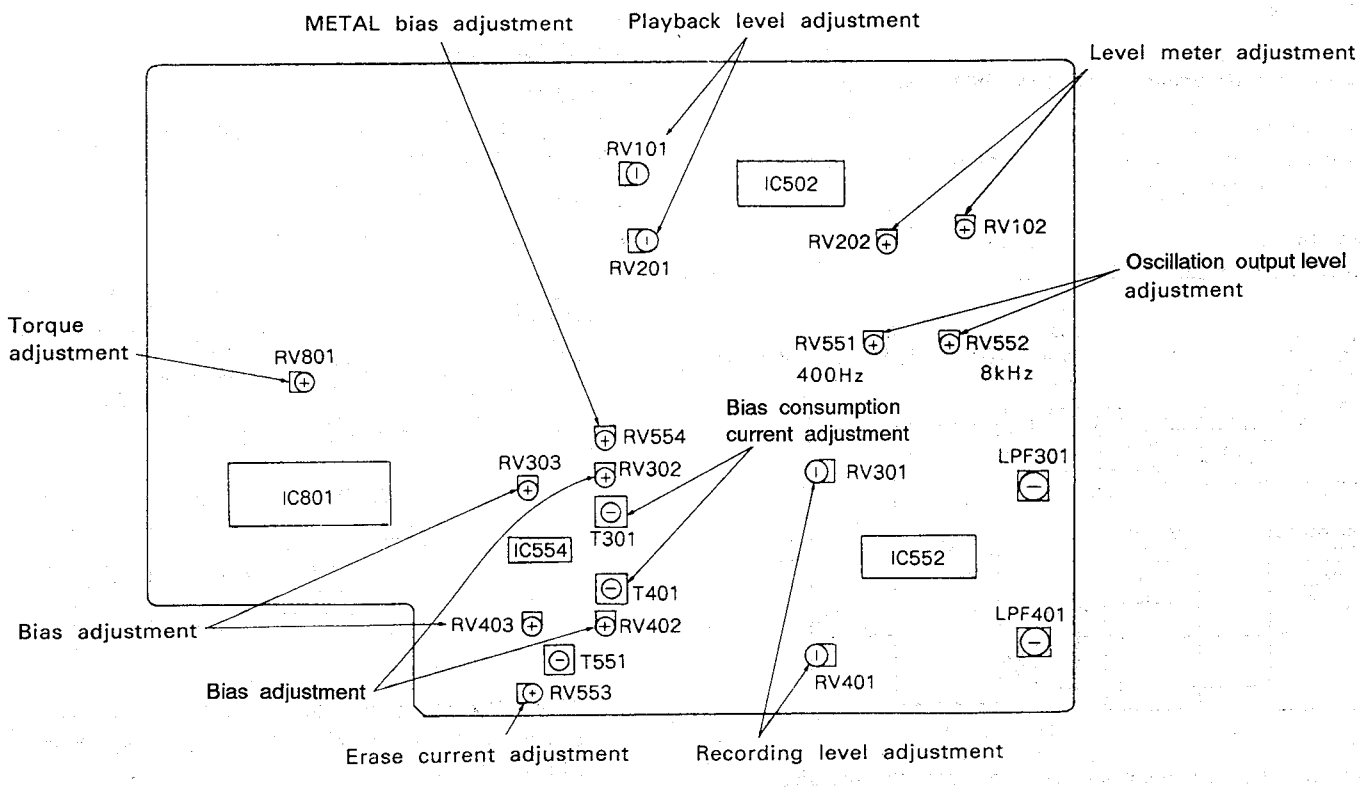
HIGH: The level (a) 1 point higher may also blink.



LOW: The level (a) 1 point higher should not blink.

Adjustment Location:

Main (A) PCB – Component side –



SECTION 3
EXPLODED VIEWS

NOTE:

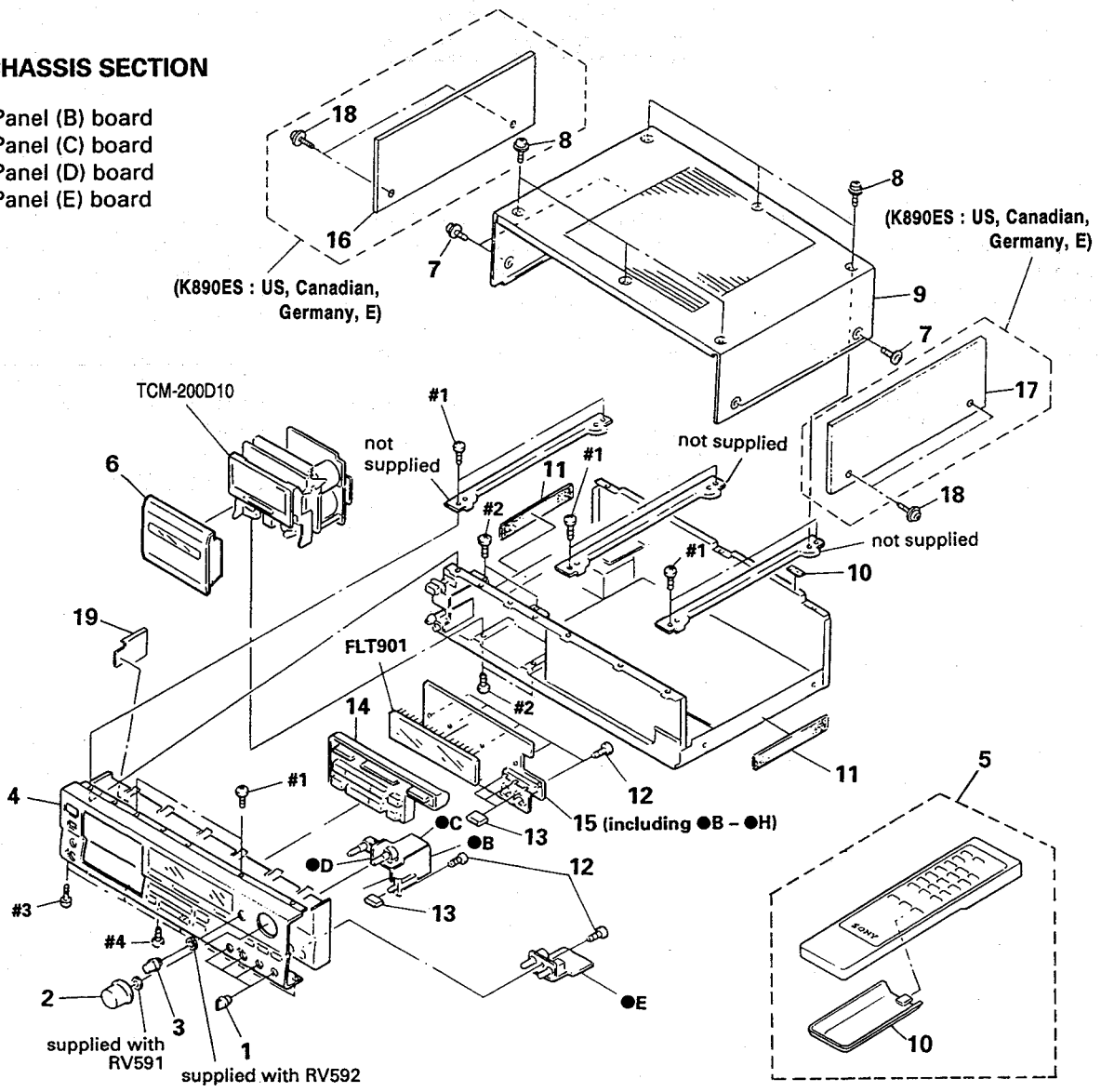
- -XX,-X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts.
  Example:
  KNOB,BALANCE (WHITE) . . . (RED)
  ↑ Parts Color
  ↑ Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  G : Germany model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

(1) CHASSIS SECTION

- B: Panel (B) board
- C: Panel (C) board
- D: Panel (D) board
- E: Panel (E) board

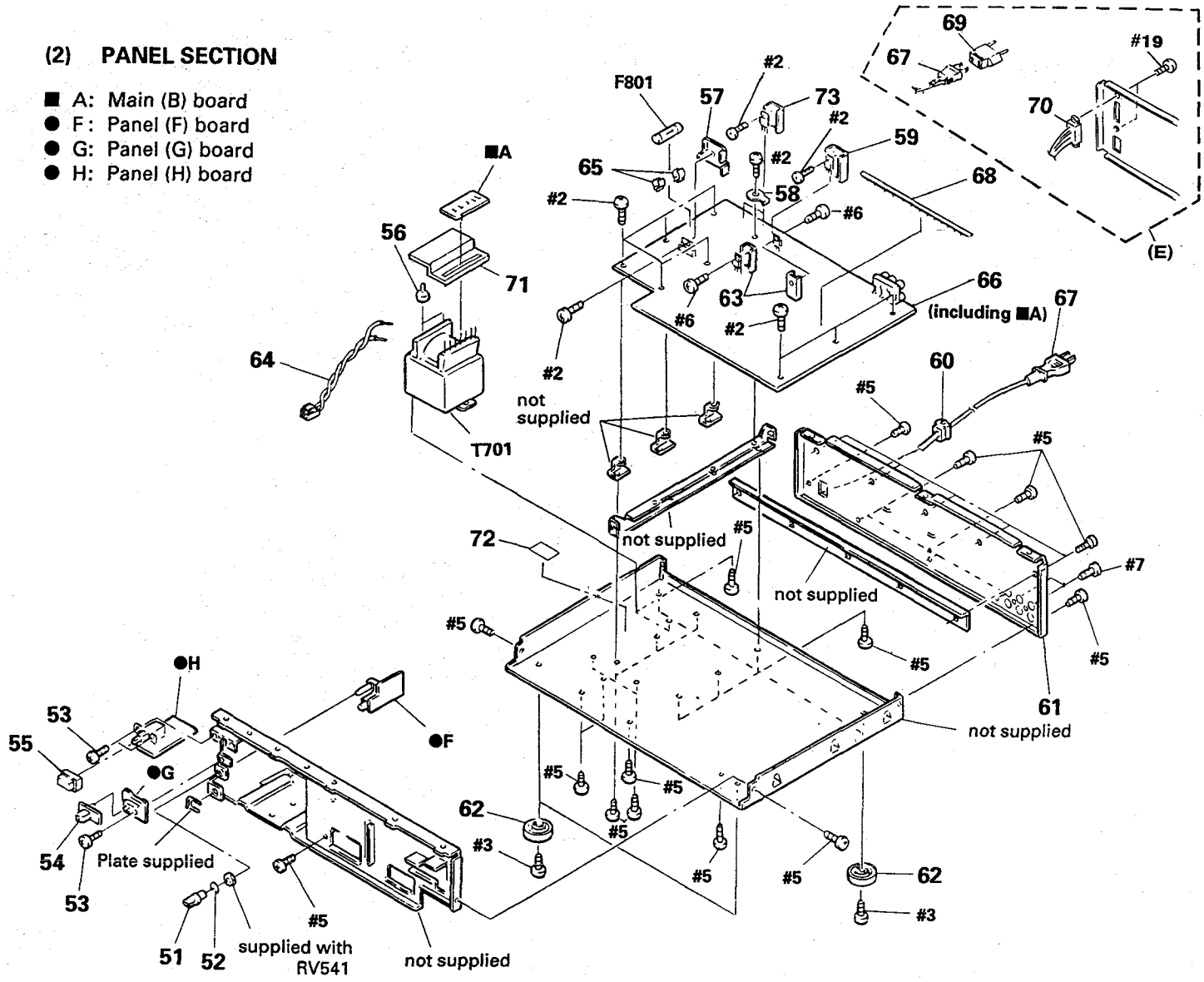


Ref. No.	Part No.	Description	Remark
1	X-3362-818-1	KNOB (DIA. 12) ASSY (B), FLAT... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
1	X-3363-490-1	KNOB (DIA. 12) ASSY (B), FLAT... (GOLD)	(K890ES:G)
2	X-3362-289-1	KNOB (VOL) ASSY... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
2	X-3365-344-1	KNOB (VOL) ASSY... (GOLD) (K890ES:G)	
3	3-364-173-01	KNOB (BAL)... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
3	3-364-173-21	KNOB (BAL)... (GOLD) (K890ES:G)	
4	A-2003-940-A	PANEL ASSY, FRONT (K222ESA)	
4	A-2004-042-A	PANEL ASSY, FRONT (K890ES:US, CND)	
4	A-2004-073-A	PANEL ASSY, FRONT... (BLACK) (K890ES:G)	
4	A-2004-079-A	PANEL ASSY, FRONT (K890ES:E)	
4	A-2004-122-A	PANEL ASSY, FRONT... (GOLD) (K890ES:G)	
5	1-465-314-11	REMOTE COMMANDER (RM-J701)*	(K890ES:E/K222ESA)
6	X-3363-745-1	LID ASSY, CASSETTE (K222ESA)	
6	X-3365-079-1	LID ASSY, CASSETTE... (BLACK)	(K890ES:US, CND, E, G)
6	X-3365-346-1	LID ASSY, CASSETTE... (GOLD) (K890ES:G)	
7	3-704-366-01	SCREW (CASE) (M3X8)	
8	3-704-366-01	SCREW (CASE) (M3X8)... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
8	3-704-366-11	SCREW (CASE) (M3X8)... (GOLD) (K890ES:G)	

Ref. No.	Part No.	Description	Remark
* 9	3-364-366-01	CASE.. (BLACK) (K890ES:US, CND, E, G/K222ESA)	
* 9	3-364-366-41	CASE.. (GOLD) (K890ES:G)	
10	2-181-754-01	COVER, BATTERY (K890ES:E/K222ESA)	
11	9-911-844-XX	CUSHION (50X20)	
12	4-951-620-01	SCREW (2.6X8), +BVTP	
13	3-364-165-01	BUTTON (14X5)... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
13	3-364-165-11	BUTTON (14X5)... (GOLD) (K890ES:G)	
14	X-3362-290-1	BUTTON (BLOCK) ASSY... (BLACK)	(K890ES:US, CND, E, G/K222ESA)
14	X-3365-345-1	BUTTON (BLOCK) ASSY... (GOLD) (K890ES:G)	
* 15	A-2006-778-A	PANEL BOARD, COMPLETE	
16	X-3340-188-1	PANEL (R) ASSY, SIDE... (BLACK)	(K890ES:US, CND, E, G)
16	X-3363-178-2	PANEL (R) ASSY, SIDE... (GOLD) (K890ES:G)	
17	X-3340-187-1	PANEL (L) ASSY, SIDE... (BLACK)	(K890ES:US, CND, E, G)
17	X-3363-177-2	PANEL (L) ASSY, SIDE... (GOLD) (K890ES:G)	
18	4-933-446-01	SCREW (SIDE PANEL) (K890ES)	
* 19	3-380-705-01	COVER, SAFETY	
FLT901	1-519-560-21	INDICATOR TUBE, FLUORESCENT	

(2) PANEL SECTION

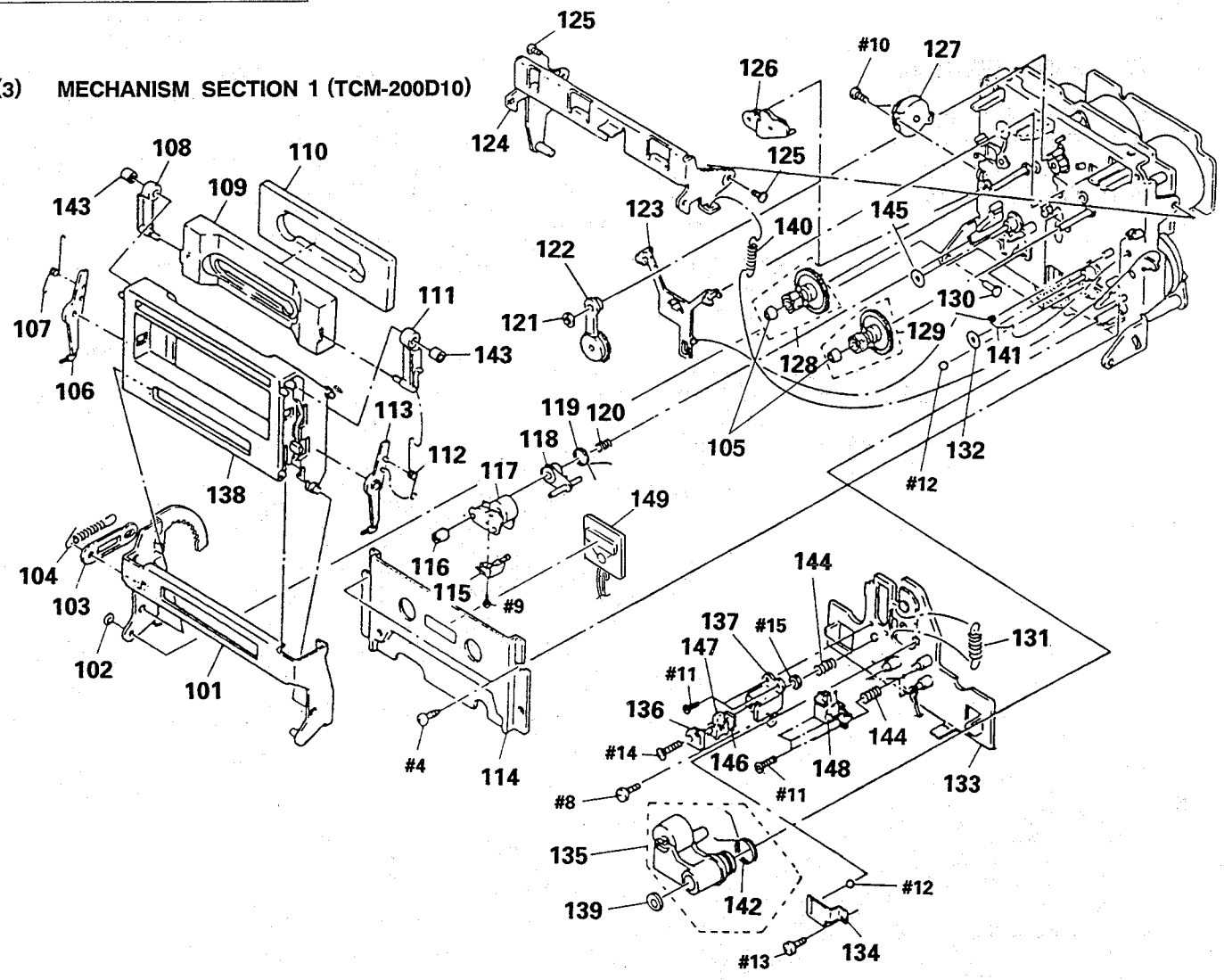
■ A: Main (B) board
● F: Panel (F) board
● G: Panel (G) board
● H: Panel (H) board



Ref. No.	Part No.	Description	Remark
51	3-354-931-01	KNOB (DIA. 10)... (BLACK) (K890ES:US, CND, E, G/K222ESA)	
51	3-354-931-31	KNOB (DIA. 10)... (GOLD) (K890ES:G)	
52	3-354-981-01	SPRING (SUS), RING... (BLACK) (K890ES:US, CND, E, G/K222ESA)	
52	3-356-935-01	SPRING... (GOLD) (K890ES:G)	
53	4-951-620-01	SCREW (2.6X8), +BVTP	
54	4-922-518-01	KNOB (TIMER)... (BLACK) (K890ES:US, CND, E, G/K222ESA)	
54	4-922-518-62	KNOB (TIMER)... (GOLD) (K890ES:G)	
55	3-354-912-01	KNOB, POWER... (BLACK) (K890ES:US, CND, E, G/K222ESA)	
55	4-917-460-51	KNOB, POWER... (GOLD) (K890ES:G)	
* 56	4-912-962-01	COVER (1P), TERMINAL (K890ES:US, CND, G)	
* 57	3-356-925-01	HEAT SINK	
58	4-870-539-00	PLATE, GROUND	
* 59	3-309-144-21	HEAT SINK	
* 60	3-703-244-00	BUSHING (2104), CORD (K890ES:US, CND, G)	
* 60	3-703-571-11	BUSHING (S) (4516), CORD	
* 60	3-703-571-11	(K890ES:E/K222ESA)	
* 61	3-372-370-11	PANEL, BACK (K890ES:US, CND)	
* 61	3-372-370-31	PANEL, BACK... (BLACK) (K890ES:G)	
* 61	3-372-370-41	PANEL, BACK (K222ESA)	
* 61	3-372-370-71	PANEL, BACK (K890ES:E)	
* 61	3-372-370-81	PANEL, BACK... (GOLD) (K890ES:G)	

Ref. No.	Part No.	Description	Remark
62	X-3304-944-1	FOOT ASSY... (BLACK) (K890ES:US, CND, E, G/K222ESA)	
62	X-3363-489-1	FOOT ASSY... (GOLD) (K890ES:G)	
* 63	4-870-273-00	HEAT SINK (E) (K890ES:G)	
63	4-902-345-01	HEAT SINK (K890ES:US, Canadian, E/K222ESA)	
* 64	1-590-321-51	LEAD (WITH CONNECTOR)	
* 65	1-533-213-31	HOLDER, FUSE	
* 66	A-2006-777-A	MAIN BOARD, COMPLETE (K890ES:US, CND, E/K222ESA)	
* 66	A-2006-779-A	MAIN BOARD, COMPLETE (K890ES:G)	
⚠67	1-575-651-11	CORD, POWER (K890ES:G)	
⚠67	1-575-653-11	CORD, POWER (K890ES:E/K222ESA)	
⚠67	1-575-975-11	CORD, POWER (K890ES:US, CND)	
* 68	1-560-242-91	BUS BAR 10P	
⚠69	1-569-007-11	ADAPTER, CONVERSION 2P (K890ES:E/K222ESA)	
⚠70	1-692-155-11	SELECTOR, POWER VOLTAGE (K890ES:E/K222ESA)	
* 71	3-356-961-02	COVER (TRANSFORMER) (K890ES:E/K222ESA)	
* 72	3-703-044-26	LABEL, CAUTION (K890ES:US, CND)	
* 73	4-880-403-11	HEAT SINK	
⚠F801	1-532-285-00	FUSE, TIME-LAG (1.25A) (K890ES:E, G/K222ESA)	
⚠F801	1-532-741-11	FUSE, GLASS TUBE (1.25A) (K890ES:US, CND)	
⚠T701	1-450-855-11	TRANSFORMER, POWER (K890ES:E/K222ESA)	
⚠T701	1-450-856-11	TRANSFORMER, POWER (K890ES:G)	
⚠T701	1-450-857-11	TRANSFORMER, POWER (K890ES:US, CND)	

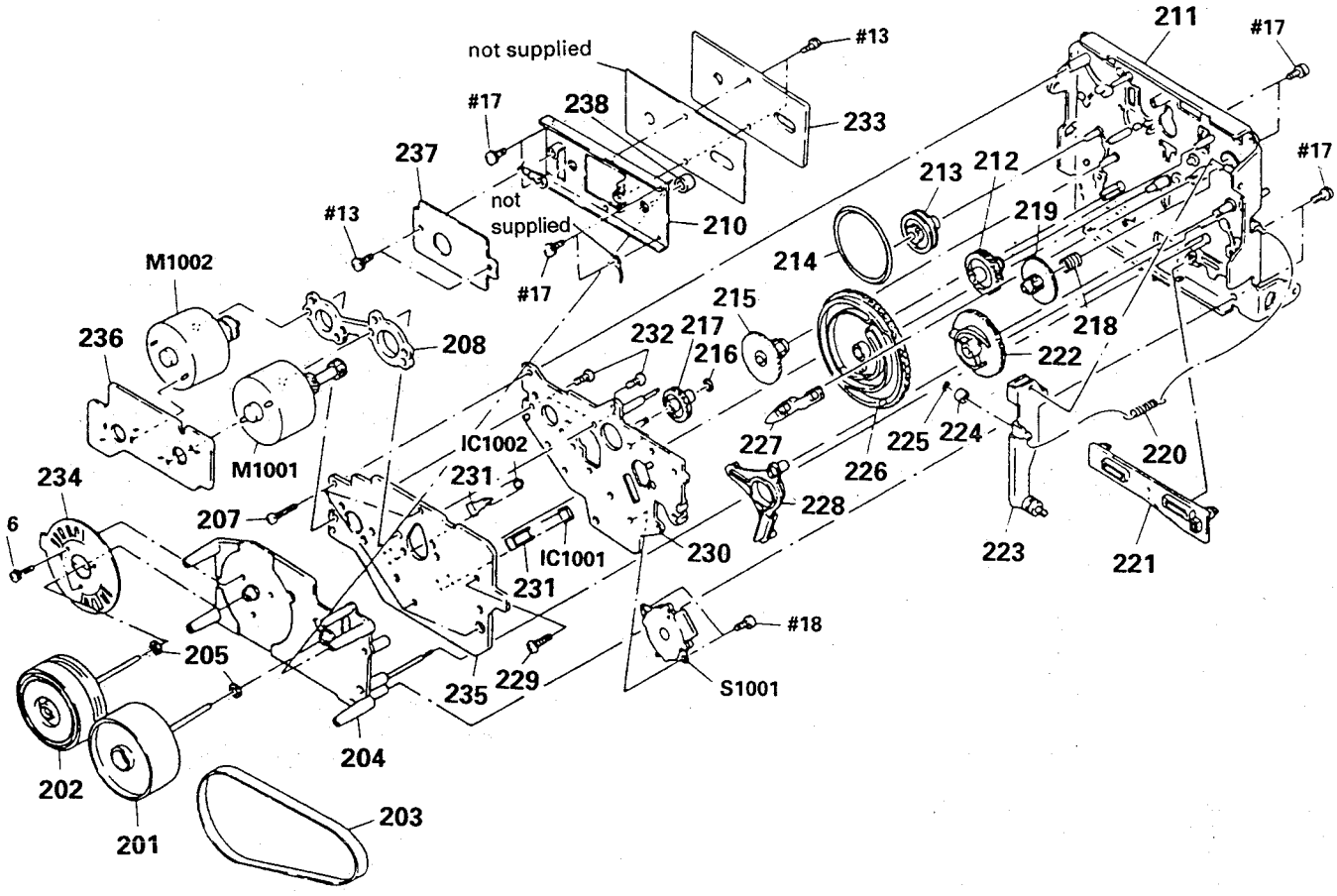
(3) MECHANISM SECTION 1 (TCM-200D10)



Ref. No.	Part No.	Description	Remark
101	X-3362-671-1	HOLDER (BG) ASSY, CASSETTE	
102	3-558-708-11	WASHER, STOPPER	
* 103	3-356-717-01	LEVER (JOINT)	
104	3-356-626-01	SPRING, TENSION	
105	3-362-308-01	CAP (REEL)	
106	3-356-932-01	LEVER (LA)	
107	3-356-927-01	SPRING (LEFT), TORSION	
108	3-356-933-01	LEVER (LB)	
109	3-356-928-11	PLATE (A), ORNAMENTAL	
* 110	3-356-929-01	ABSORBENT, VIBRATION	
111	3-356-931-01	LEVER (RB)	
112	3-356-926-01	SPRING (RIGHT), TORSION	
113	3-356-930-01	LEVER (RA)	
114	X-3356-613-1	PLATE ASSY, ORNAMENTAL	
115	3-564-138-00	GUIDE (S), TAPE	
116	3-356-652-01	NUT (PINCH LEVER S)	
117	X-3356-621-1	LEVER (PINCH LEVER S) ASSY	
118	3-356-660-01	LEVER (PS)	
119	3-356-661-01	SPRING (PINCH LEVER S), TORSION	
120	3-356-657-01	SPRING (PS), COMPRESSION	
121	3-669-465-00	WASHER (1.5), STOPPER	
122	X-3356-641-1	LEVER (FR2) ASSY	
123	3-356-614-01	SLIDER (BRAKE)	
* 124	X-3356-608-1	LEVER (LIFTER) ASSY	
125	3-356-601-11	SCREW, STEP	

Ref. No.	Part No.	Description	Remark
126	X-3356-623-1	LEVER (BT) ASSY	
127	3-319-224-41	DAMPER, SMALL	
128	X-3356-629-1	GEAR (S) ASSY	
129	X-3356-627-1	GEAR (T) ASSY	
130	3-356-710-01	SHAFT (LEFT) (CASSETTE HOLDER)	
131	3-356-658-01	SPRING (LIMITER H), TENSION	
132	3-332-763-01	RING, OIL RESERVOIR	
* 133	X-3362-199-1	SLIDER (HEAD CHASSIS D) ASSY	
134	3-356-656-01	SPRING (HEAD PC BOARD), LEAF	
135	X-3356-620-1	LEVER (PINCH LEVER T) ASSY	
136	3-318-433-01	SPRING	
* 137	3-576-977-00	BRACKET, E. HEAD	
138	X-3365-065-1	HOLDER (D9) ASSY, CASSETTE	
139	3-669-596-00	WASHER (2.3), STOPPER	
140	3-356-625-01	SPRING, TENSION	
141	3-356-619-01	SPRING (B), TORSION	
142	3-356-672-01	SPRING (PINCH LEVER T), TORSION	
143	3-356-946-01	BUSHING	
144	3-564-121-00	SPRING, COMPRESSION	
145	3-356-713-01	WASHER	
* 146	1-608-268-00	PC BOARD, ERASE HEAD	
147	1-543-836-11	HEAD, MAGNETIC (ERASE)	
148	1-543-684-21	HEAD, MAGNETIC (REC/PB) (RPA709-3602A)	
149	8-719-980-85	LED SLF325C (CASSETTE LAMP) (GREEN)	

(4) MECHANISM SECTION 2 (TCM-200D10)



Ref. No.	Part No.	Description	Remark
201	X-3362-284-1	FLYWHEEL (S2.3) ASSY	
202	X-3356-619-1	FLYWHEEL (DT) ASSY	
203	3-364-600-01	BELT (CAPSTAN)	
204	X-3362-281-1	CHASSIS (D2.3) ASSY	
205	3-356-705-31	WASHER (CAPSTAN)	
207	3-355-801-01	SCREW (BTP 2X18)	
* 208	3-356-628-01	SPACER (MOTOR)	
* 210	X-3362-282-1	BRACKET (THRUST RETAINER) ASSY	
211	X-3356-622-1	CHASSIS (C) ASSY, MECHANICAL	
212	3-356-703-01	GEAR (COMMUNICATION C)	
213	3-356-607-01	PULLEY (MODE)	
214	3-356-603-01	BELT (MODE)	
215	3-356-606-01	GEAR (MODE)	
216	3-669-465-11	WASHER (1.5), STOPPER	
217	3-356-702-01	GEAR (COMMUNICATION B)	
218	3-356-605-01	SPRING, COMPRESSION	
219	3-356-609-01	GEAR (LOADING)	
220	3-376-854-01	SPRING, TENSION	
221	3-356-653-01	SLIDER (PAUSE)	
222	3-356-616-01	GEAR (LOADING CAM)	

Ref. No.	Part No.	Description	Remark
* 223	X-3356-606-1	LEVER (LOADING) ASSY	
224	3-356-630-01	ROLLER (LOADING)	
225	3-558-708-21	WASHER, STOPPER	
226	3-356-654-01	GEAR (MODE CAM C)	
227	3-356-617-01	LEVER (SELECTION)	
228	3-356-613-01	LEVER (MODE)	
229	3-356-707-01	SCREW (+PTPWH 2X25)	
* 230	X-3356-616-1	BRACKET (MOTOR D) ASSY	
231	3-356-631-01	HOLDER (SENSOR)	
232	3-363-804-01	SCREW (+P 2.6X6.5)	
233	A-2006-154-A	CAPSTAN C.O.C BOARD, COMPLETE	
234	1-632-779-11	PC BOARD, FG	
* 235	1-632-740-11	MD BOARD	
* 236	1-632-741-11	REEL MOTOR BOARD	
* 237	1-632-746-11	COMPARATOR BOARD	
238	3-364-135-01	RETAINER (S), THRUST	
M1001	X-3356-638-1	MOTOR (REEL R) ASSY	
M1002	X-3356-604-1	MOTOR (ASSIST) ASSY	
S1001	1-466-238-11	ENCODER, ROTARY	

SECTION 4
ELECTRICAL PARTS LIST

The following parts differ from those in TC-K222ESL/K 870ES.

NOTE :
- RESISTORS
  All resistors are in ohms
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

No.	Part No.	Description			Remarks
	* A-2006-777-A	MAIN BOARD, COMPLETE (K890ES ; US, Canadian, E / K222ESA)			
	* A-2006-779-A	MAIN BOARD, COMPLETE (K890ES ; Germany)			
		**********			
		< RESISTOR >			
R118	1-247-719-11	CARBON	3.3K	5%	1/4W
R119	1-247-719-11	CARBON	3.3K	5%	1/4W
R137	1-249-427-11	CARBON	6.8K	5%	1/4W
R218	1-247-719-11	CARBON	3.3K	5%	1/4W
R219	1-247-719-11	CARBON	3.3K	5%	1/4W
R237	1-249-427-11	CARBON	6.8K	5%	1/4W
R310	1-247-128-00	CARBON	750	5%	1/4W
R312	1-247-719-11	CARBON	3.3K	5%	1/4W
R313	1-247-719-11	CARBON	3.3K	5%	1/4W
R410	1-247-128-00	CARBON	750	5%	1/4W
R412	1-247-719-11	CARBON	3.3K	5%	1/4W
R413	1-247-719-11	CARBON	3.3K	5%	1/4W
		< VARIABLE RESISTOR >			
RV102	1-238-601-11	ADJ, CARBON	22K (CA METER L)		
RV202	1-238-601-11	ADJ, CARBON	22K (CA METER R)		
**********					
	* A-2006-778-A	PANEL BOARD, COMPLETE			
		**********			
		< INDICATOR TUBE >			
FLT901	1-519-560-21	INDICATOR TUBE, FLUORESCENT			
**********					
		MISCELLANEOUS			
		**********			
	1-543-684-21	HEAD, MAGNETIC (REC/PB)(RPA709-3602A)			
	1-543-836-11	HEAD, MAGNETIC (ERASE)			
	1-692-155-11	SELECTOR, POWER VOLTAGE (K890ES ; E / K222ESA)			
T701	⚠ 1-450-855-11	TRANSFORMER, POWER (K890ES ; E / K222ESA)			
T701	⚠ 1-450-856-11	TRANSFORMER, POWER (K890ES ; Germany)			
T701	⚠ 1-450-857-11	TRANSFORMER, POWER (K890ES ; US, Canadian)			

When indicating parts by reference number, please include the board name.

No.	Part No.	Description	Remarks
		ACCESSORY & PACKING MATERIAL	
		**********	
	* 3-354-919-51	INDIVIDUAL CARTON (K890ES)	
	* 3-366-699-91	INDIVIDUAL CARTON (K222ESA)	
	* 3-754-181-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH/GERMAN) (K222ESA, K890ES ; Canadian, Germany, E)	
	* 3-754-181-21	MANUAL, INSTRUCTION (ENGLISH) (K890ES ; US)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-548-04	SCREW +BVTT 3X8 (S)	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-682-548-09	SCREW +BVTT 3X8 (S)	
#4	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#5	7-682-547-09	SCREW +BV 3X6, S TIGHT	
#6	7-682-147-15	SCREW, TR (+P 3X6)	
#7	7-621-849-00	SCREW (BV/RING)	
#8	7-621-775-10	SCREW +B 2.6X4	
#9	7-628-253-00	SCREW +PS 2X4	
#10	7-621-255-20	SCREW +BVTT 2X4 (S)	
#11	7-621-772-10	SCREW +B 2X4	
#12	7-671-154-01	STENLESS BALL	
#13	7-685-870-01	SCREW +BVTT 3X5 (S)	
#14	7-621-772-70	SCREW +B 2X14	
#15	7-622-205-05	NUT M2 TYPE2	
#16	7-628-254-10	SCREW +PS 2.6X6	
#17	7-682-648-09	SCREW +PS 3X8	
#18	7-621-255-35	SCREW +BVTT 2X5 (S)	
#19	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S (K890ES ; E / K222ESA)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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Sony Corporation
Audio Group

TC-K222ESG/K850ES

SERVICE MANUAL

US Model
Canadian Model
UK Model
West Germany Model
TC-K850ES
E Model
TC-K222ESG
TC-K850ES

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	New
Tape Transport Mechanism Type	TCM-200D2

SPECIFICATIONS

Recording system 4-track 2-channel stereo
Bias AC bias
Heads Erase head × 1 (S & F head)
Recording head × 1 (Permalloy head)
Playback head × 1 (LA head)
Motors Capstan motor × 1
(direct drive linear torque BSL motor)
Reel motor × 1 (DC motor)
DC motor × 1
Wow and flutter 0.024% WRMS (NAB), ±0.065% (DIN)
Fast-forward and rewind time
Approx. 90 sec. (with C-60 cassette)
Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	15–21,000 Hz (±3 dB, DIN) 15–16,000 Hz (0VU recording)
TYPE II cassette (Sony UX-S)	15–19,000 Hz (±3 dB, DIN)
TYPE I cassette (Sony HF-S)	15–17,000 Hz (±3 dB, DIN)

Signal-to-noise ratio (at peak level)

Dolby NR switch / Cassette	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	61 dB	70 dB	76 dB
TYPE II (Sony UX-S)	59 dB	68 dB	74 dB
TYPE I (Sony HF-S)	57 dB	66 dB	72 dB

Total harmonic distortion
1.0% (with Sony METAL-ES cassette)
Inputs

Line inputs (phono jacks) CD DIRECT input (phono jacks)	Sensitivity	77.5 mV (−20 dB)
	Input impedance	50k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.44 V (−5 dB) at a load impedance 47k ohms
	Load impedance	Over 10k ohms
Headphones (stereo phone jack)	Output level	0–2.5 mW at a load impedance of 32 ohms

General
Power requirements
West Germany model :
220 V AC, (or 240 V AC adjustable by Sony personnel), 50/60 Hz
US, Canadian model :
120 V AC, 60 Hz
UK model :
240 V AC (or 220 V AC adjustable by Sony personnel), 50/60 Hz
E model :
120, 220, or 240 V AC adjustable, 50/60 Hz
Power consumption 23 W
Dimensions Approx. 430 × 135 × 350 mm (w/h/d)
(17 × 5 3/8 × 13 7/8 inches)
Approx. 470 × 135 × 350 mm (w/h/d)*
(18 1/2 × 5 3/8 × 13 7/8 inches)*
Weight Approx. 6.9 kg (15 lbs 4 oz)
Approx. 7.9 kg (17 lbs 7 oz)*
* including projecting parts. controls and wooden side panels
Supplied accessory Audio connecting cord (2)
Optional accessory Wireless remote control unit RM-J701

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

STEREO CASSETTE DECK
SONY®

TABLE OF CONTENTS

Section	Title	Page
	SPECIFICATIONS	1
	MODEL IDENTIFICATION	3
	SAFETY CHECK-OUT	3
1.	GENERAL	4
2.	DISASSEMBLY	5
3.	ADJUSTMENTS	
3-1.	Mechanical Adjustments	7
3-2.	Electrical Adjustments	10
4.	DIAGRAMS	
4-1.	Block Diagram	15
4-2.	Semiconductor Lead Layouts	17
4-3.	Circuit Boards Location	18
4-4.	IC Block Diagrams	18
4-5.	Printed Wiring Boards – Main Section –	20
4-6.	Schematic Diagram – Main Section –	25
4-7.	Schematic Diagram – Panel section –	30
4-8.	Printed Wiring Boards – Panel Section –	33
5.	EXPLODED VIEWS	
5-1.	Overall Section	35
5-2.	Panel Section	36
5-3.	Mechanism Section (1)	37
5-4.	Mechanism Section (2)	38
6.	ELECTRICAL PARTS LIST	22

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270℃ during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

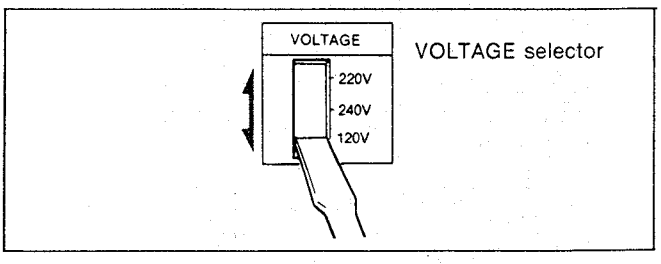
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

Operating voltage

Before connecting the unit to the power source, check that the operating voltage of your unit is the same as the local power supply.
If your model has a voltage selector on the rear panel and it must be reset, **disconnect the AC power cord** and set the selector to the appropriate voltage.



SAFETY-RELATED COMPONENT WARNING!!

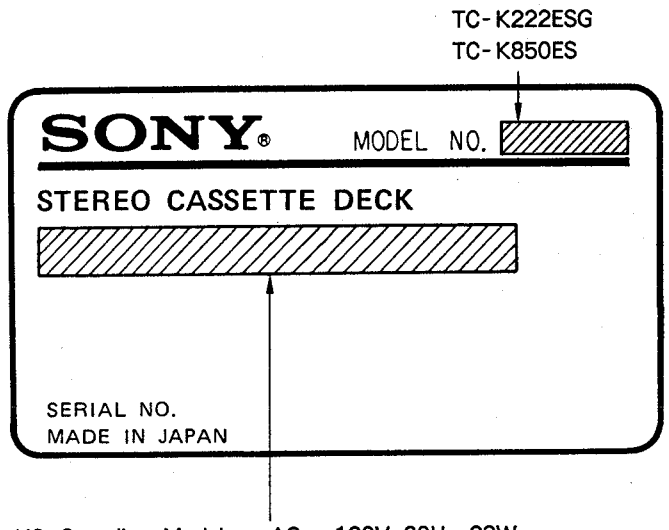
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION

– Specification Label –



US, Canadian Models: AC : 120V 60Hz 23W
West Germany Model: AC : 220V ∿50/60Hz 23W
UK Model: AC : 240V ∿50/60Hz 23W
E Model: AC : 120, 220, 240V ∿50/60Hz 23W

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

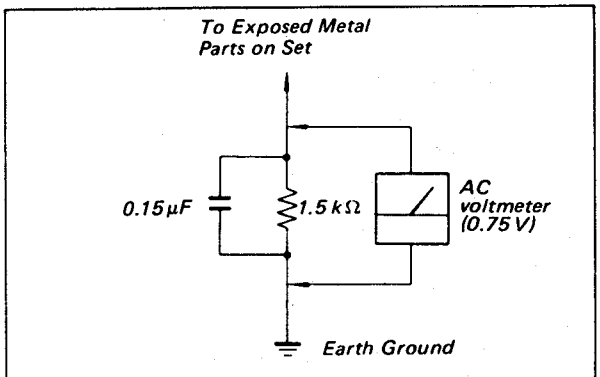
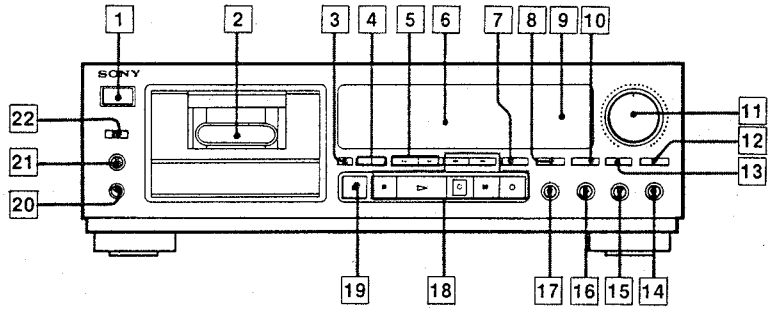


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

LOCATION AND FUNCTION OF CONTROLS



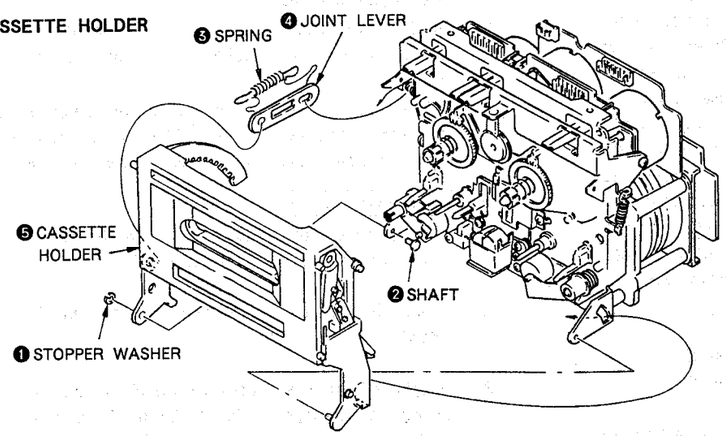
1 **POWER switch**
2 **Cassette holder**
3 **DISPLAY MODE button**
4 **COUNTER buttons**
RESET button/MEMORY button
5 **I◁◁ ▷▷I AMS (Automatic Music Sensor) buttons**
6 **LINEAR COUNTER and PEAK PROGRAM METER**
7 **MONITOR button**
8 **MPX FILTER button**
9 **Remote sensor ***
10 **HX PRO button**
11 **REC LEVEL (recording level) control**
12 **INPUT button**
13 **CALIBRATION button**
14 **BALANCE control**
15 **REC LEVEL (recording level) control (for calibration)**
16 **BIAS (bias adjust) control**
17 **DOLBY NR switch**
18 **Tape operation buttons and indicators**
◀◀ (rewind) button
■ (stop) button
▶ (play) button and indicator
▶▶ (fast-forward) button
● REC (record) button and indicator
II PAUSE button and indicator
O REC MUTE (record muting) button
19 ⏏ OPEN/CLOSE button
20 **HEADPHONES jack (stereo phone jack)**
21 **PHONE LEVEL (headphone level) control**
22 **TIMER switch**

* You can remotely control this cassette deck with:
— A remote commander that has an R mark and comes with a Sony amplifier or receiver and which can be used to control a cassette deck.
— An optional Sony remote commander that has an R mark.

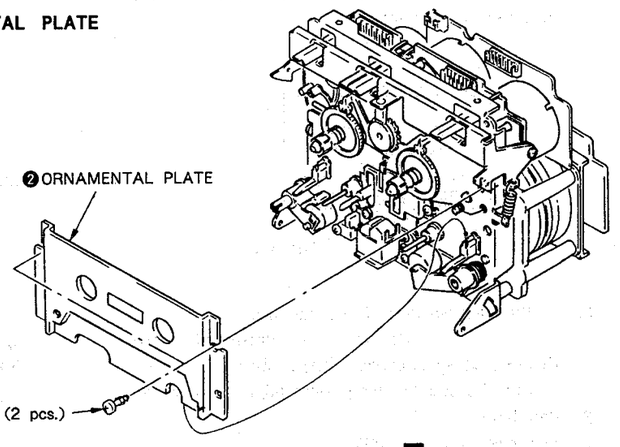
SECTION 2
DISASSEMBLY

NOTE : Follow the disassembly procedure in the numerical order given.

CASSETTE HOLDER

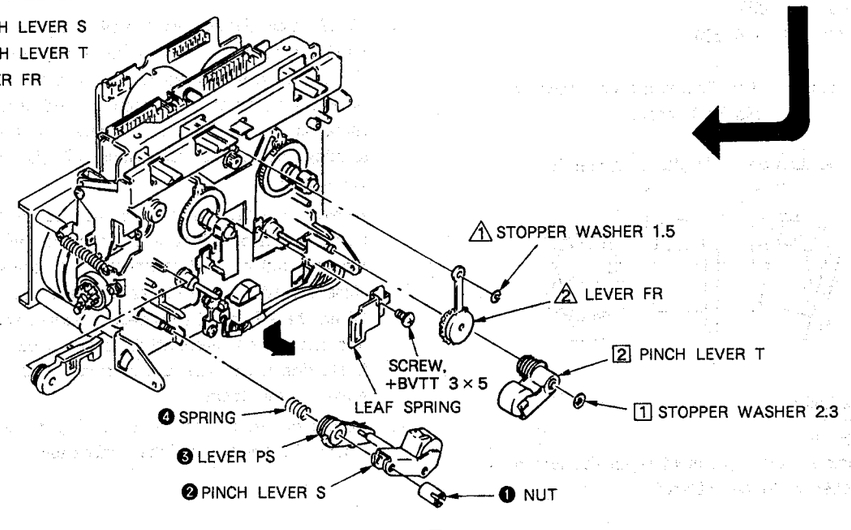


ORNAMENTAL PLATE



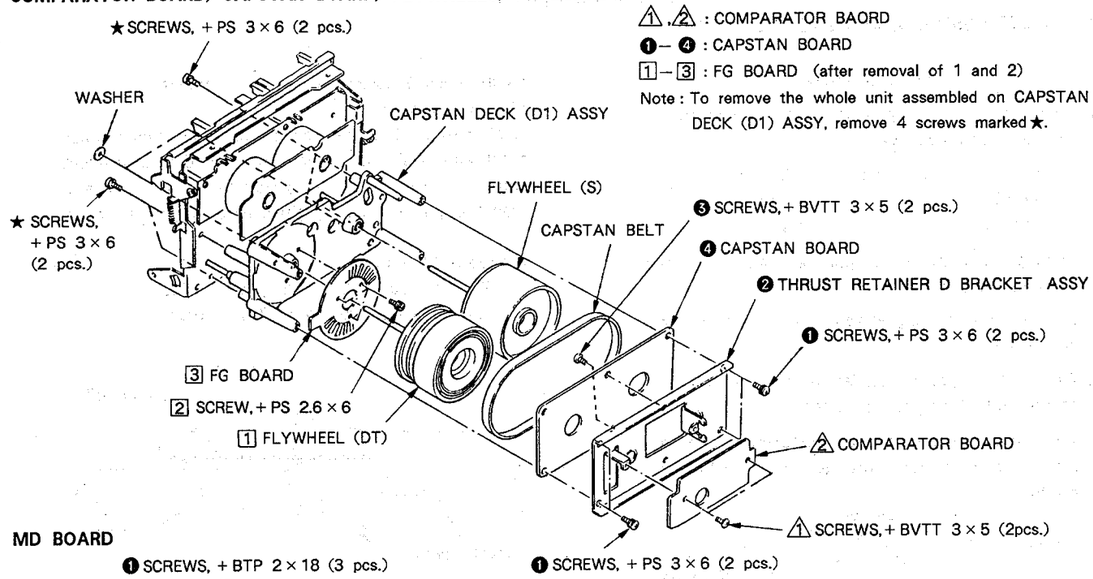
PINCH LEVER/LEVER FR/HEAD

❶ – ❹ : PINCH LEVER S
[1], [2] : PINCH LEVER T
△1, △2 : LEVER FR

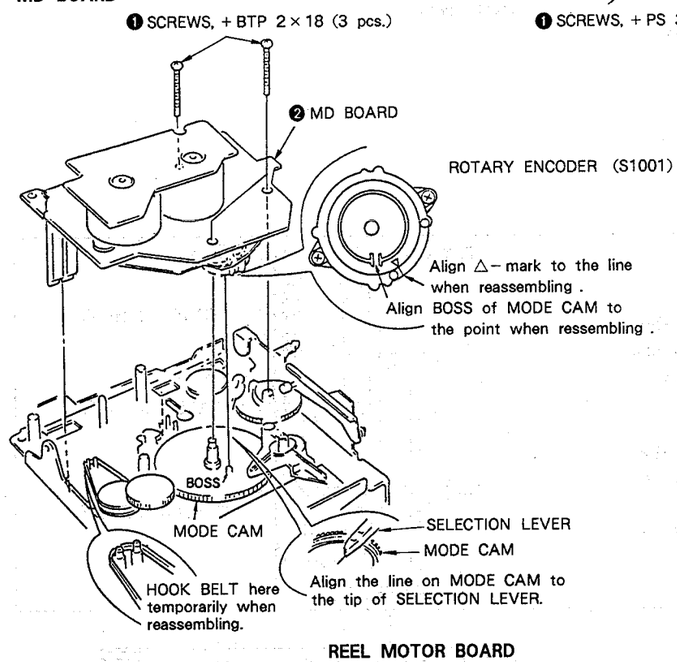


COMPARATOR BOARD/CAPSTAN BOARD/FLYWHEELS/FG BOARD

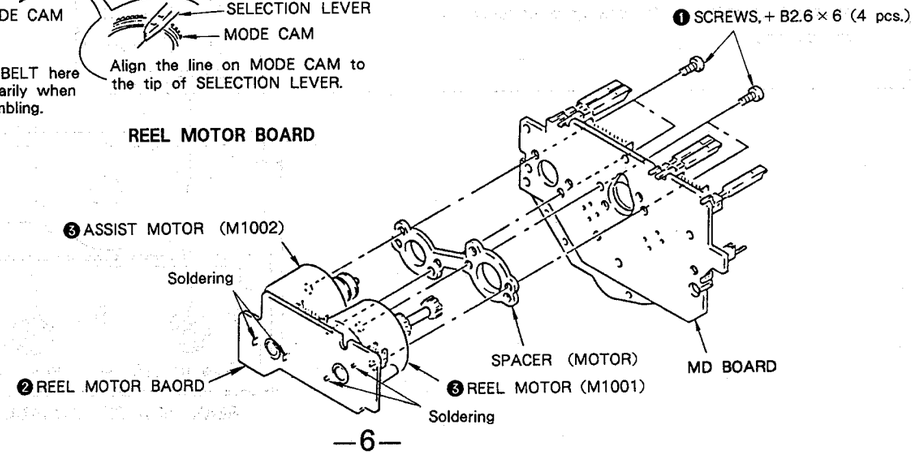
△1, △2 : COMPARATOR BAORD
❶ – ❹ : CAPSTAN BOARD
[1] – [3] : FG BOARD (after removal of 1 and 2)
Note : To remove the whole unit assembled on CAPSTAN DECK (D1) ASSY, remove 4 screws marked ★.


★ SCREWS, + PS 3 × 6 (2 pcs.)
WASHER
CAPSTAN DECK (D1) ASSY
FLYWHEEL (S)
★ SCREWS, + PS 3 × 6 (2 pcs.)
❸ SCREWS, + BVTT 3 × 5 (2 pcs.)
CAPSTAN BELT
❹ CAPSTAN BOARD
❷ THRUST RETAINER D BRACKET ASSY
❶ SCREWS, + PS 3 × 6 (2 pcs.)
[3] FG BOARD
[2] SCREW, + PS 2.6 × 6
[1] FLYWHEEL (DT)
△2 COMPARATOR BOARD
△1 SCREWS, + BVTT 3 × 5 (2pcs.)
❶ SCREWS, + PS 3 × 6 (2 pcs.)

MD BOARD


❶ SCREWS, + BTP 2 × 18 (3 pcs.)
❷ MD BOARD
ROTARY ENCODER (S1001)
Align △ – mark to the line when reassembling .
Align BOSS of MODE CAM to the point when ressembling .
BOSS
MODE CAM
SELECTION LEVER
MODE CAM
HOOK BELT here temporarily when reassembling.
Align the line on MODE CAM to the tip of SELECTION LEVER.

REEL MOTOR BOARD



SECTION 3
ADJUSTMENTS

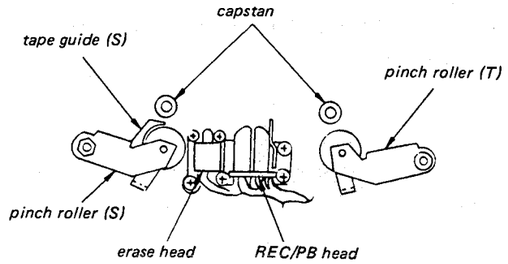
3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback and erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.



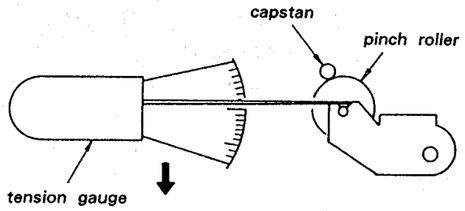
Pinch Roller Pressing Force Measurement

Mode : playback

Hook needle of the tension gauge to the pinch roller shaft and push back pinch roller to detach it from capstan. Then, return it gradually to capstan and read the gauge when the pinch roller begins turnning.

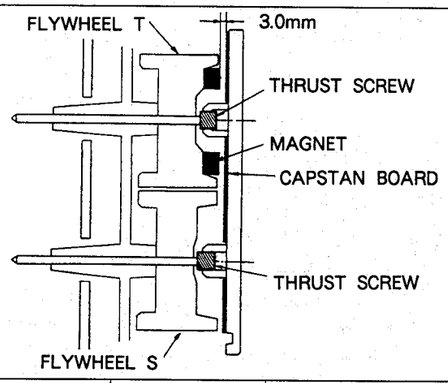
Standard Limits :

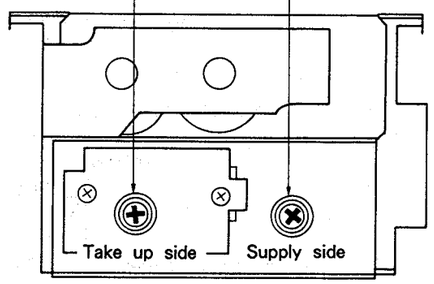
Tape-up side : 270 – 350g (9.5 – 12oz)
Supply side : 180 – 280g (6.4 – 9.9oz)



FLYWHEELS T/S THRUST ADJUSTMENT

1. FLYWHEEL T THRUST ADJUSTMENT :
   Insert 3mm – thick spacer guage into the clearance between magnet of FLYWHEEL T and CAPSTAN Board, and adjust THRUST SCREW so that thrust play is 0.2 – 0.4mm .
2. FLYWHEELS THRUST ADJUSTMENT :
   Tighten THRUST SCREW lightly until the flywheel has no play and then loosen the screw by 1/2 – 3/4 turns.
3. After adjustments, apply locking compounce to the screws.





REAR VIEW OF MECHANISM

Tape Path Adjustment

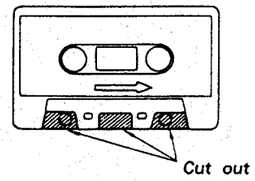
• Refer to Adjustment Position on page 10.

Note : When using the adjustment methods for other than replacement reasons, please do not tamper unnecessarily with the adjustment screws or the erasehead because either the supply pinch roller guide or the record/playback head will be made the standard tape paths. Moreover, when it is necessary to adjust and replace two or more of any of the heads and/or pinch rollers, replace them one by one, completely taking out the first tape path, and then replacing the second one.

Preparation :

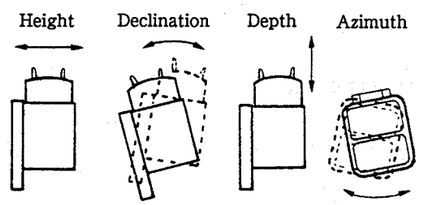
1. Mirror cassette CQ009C 8-909-708-01
   (or CQ012C 8-909-708-02)

   If one does not have this, cut out the sections of a 120-minute cassette shell as indicated below and use that cassette.



2. Phillips screwdriver (medium-size) :
   For the head adjustment screws
   Blade-type screwdriver (large-size) :
   For the supply pinch roller adjustment screws
3. Pen light
4. WS-48B (3 kHz, 0 dB)
5. P-4-A100 (10 kHz, -10 dB)

Definition of Terms : The figures are of a record/playback head.



Adjustment Method :

Supply Pinch Roller

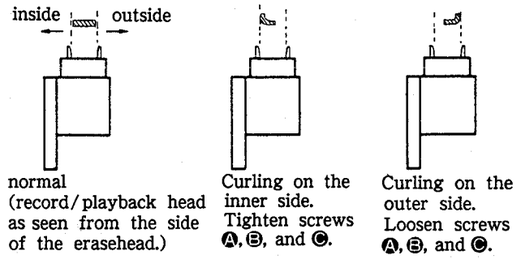
Note : Only perform this adjustment when the supply pinch roller is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. Check to see whether the tape is curling at the record/playback head guide or the pinch roller guide.
   If it is curling, remove the curl by adjusting the Ⓔ tape curl adjustment screw. Then, check that the tape is running past the middle of the erasehead.

Record/playback Head

Note : Only perfom this adjustment when the record/playback head is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. **(Height Adjustment)** Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws Ⓐ, Ⓑ, and Ⓒ, respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).



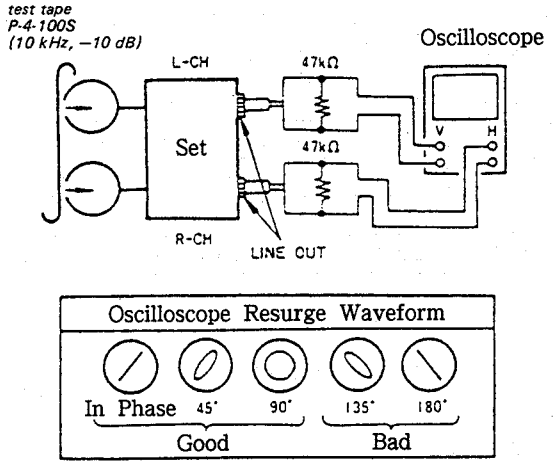
normal (record/playback head as seen from the side of the erasehead.)

Curling on the inner side. Tighten screws Ⓐ, Ⓑ, and Ⓒ.

Curling on the outer side. Loosen screws Ⓐ, Ⓑ, and Ⓒ.

3. **(Declination Adjustment)** While in the record/playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/shifting down) at the guide of the record/playback head.
   Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.
   When there is a shift, tighten screws Ⓑ and Ⓒ equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.
4. Repeat the adjustments in steps 2 and 3 and fine adjust the height and the declination.

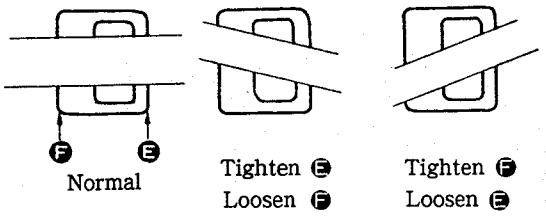
5. **(Preliminary Azimuth Adjustment)**
After demagnetizing and cleaning the adjustment head, play back WS-48B (3 kHz, 0 dB).
Turn screw ⓒ so that the reading on the level meter of the unit or that of the level meter connected to LINE OUT is maximized.
If the screw is turned at least half a revolution, repeat the adjustments from step 1.
6. **(Tape Path Check)** Connect the oscilloscope to LINE OUT and play back P-4-A100 (10 kHz, -10 dB) to display a resurge waveform. After 20 seconds of record/playback (after the tension within the loop has been increased sufficiently), make sure the variation in the resurge is within ± 90 degrees (within ± 45 degrees is desired). If the variation is greater than this, it is because the declination and/or the height adjustment is not perfect. Repeat the adjustments from step 1.



Erasehead

Note : Only perform this adjustment when the erasehead is to be replaced.

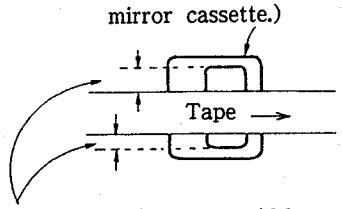
1. Insert the mirror cassette and put the unit in record/playback mode.
2. **(Azimuth Adjustment)** Adjust the azimuth of the erasehead by adjusting screws ⓔ and ⓕ so that the tape runs as evenly as possible.



(The erasehead as seen when erasing the mirror cassette.)

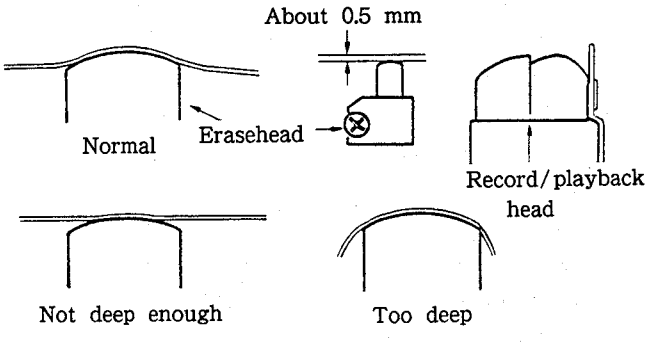
3. **(Height adjustment)** Turn screws ⓓ, ⓔ, and ⓕ all by the same angle so that the portions of the erasehead visible at top and bottom are nearly of equal width. If the width at the top is greater, tighten the screws ; if the width at the bottom is greater, loosen the screws.

Erasehead (The erasehead as seen through the mirror cassette.)



Make these the same width.

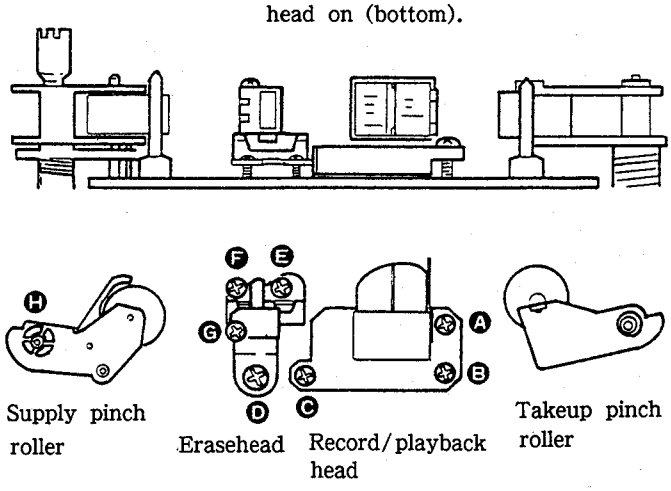
4. **(Declination Adjustment)** Leaving it in the playback position, put the back tension to 0 and make certain the erasehead part and supply pinch roller guide part do not shift. If there is a shift, turn the screw ⓓ and change the declination. Looking at it using the mirror cassette, if the tape shifts up, tighten the screw, and if it shifts down, loosen the screw.
5. Repeat the adjustments beginning with step 2 and fine adjust the height and declination. And make sure the tape does not curl up on the pinch roller guide or the guide part of the record/playback head.
6. **(Depth Adjustment)** In order to make the entire head play the tape smoothly, and to make sure the depth of the erasehead is neither too shallow nor too deep, loosen screw ⓒ a bit.



Check

1. Check to make sure that there are no curls or shifts throughout the whole tape path and that the tape runs smoothly.
2. Reapply the locking compound to the adjusted screws. (The locking compound should only be applied to screw ⓒ after the azimuth has been adjusted.)

Adjustment Position : As seen from the cassette, side (top) and MD as seen head on (bottom).



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

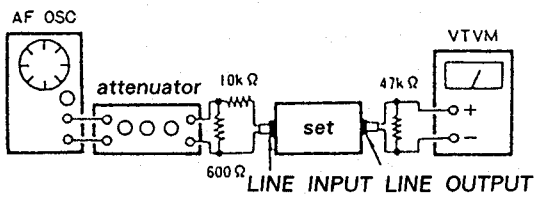
- Simultaneous REC/PB Mode:
  Input the signals to LINE IN terminal and set to REC mode. Set the monitor switch to TAPE, and monitor the recorded signal from LINE OUT terminal.
- Switch Position:
  DOLBY NR ..... OFF
  MPX FILTER ..... OFF
  TIMER ..... OFF
  MONITOR ..... TAPE
  HX PRO ..... OFF
  CALIBRATION ..... OFF
  CD DIRECT ..... OFF
  BIAS ..... CENTER CLICK
  REC LEVEL ..... CENTER CLICK
  BALANCE ..... CENTER CLICK
- Standard Record:
  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

Input Terminal	LINE IN
source impedance	10 kΩ
input level	0.25 V (−10 dB)

Standard Output Level

Output Terminal	LINE OUT
load impedance	47 kΩ
output level	0.44 V (−5 dB)



Torque Adjustment and Measurement

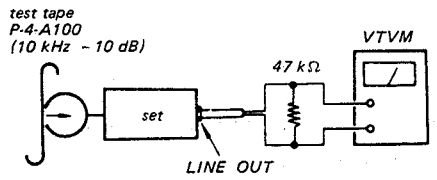
1. Load a torque meter cassette CQ-102C and push ▶ button.
2. Adjust RV803 so that the reading on the torque meter is 40 ± 3g • cm (0.56 ± 0.042oz • inch).
3. After the adjustment, apply suitable locking compound to RV803.

Torque	Torque Meter	Reading
FWD	CQ-102C	37 – 43g•cm (0.51 – 0.60oz•inch)
FWD Back tension	CQ-102C	8 – 10.5g•cm (0.11 – 0.15oz•inch)
FF/REW	CQ-201B	70 – 120g•cm (0.97 – 1.67oz•inch)

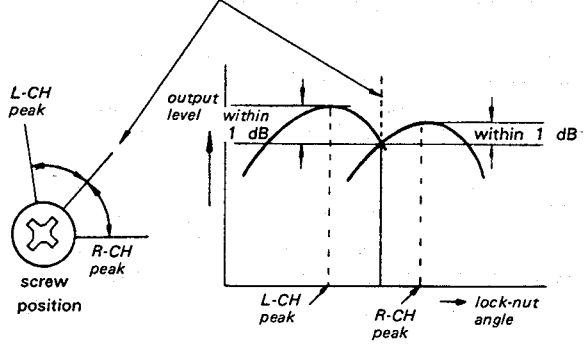
Playback Head Azimuth Adjustment

Procedure:

1. Mode: playback

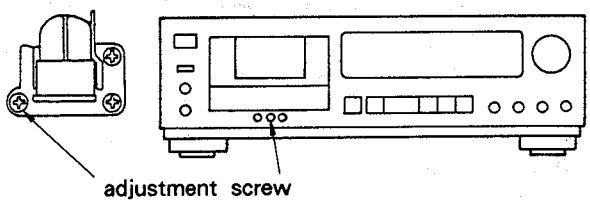


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



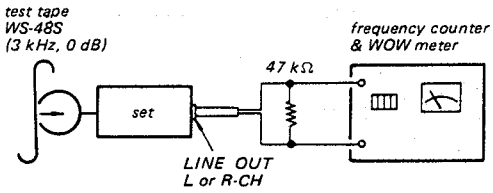
3. Phase check
   By the means of 6. Tape Path check on page 9 confirm that phase difference is proper.
4. After the adjustment, lock the adjustment screw with locking compaund.

Adjustment Location :



Tape Speed/WOW Check

Procedure:



1. Measure the output frequency and the WOW value while playing back the tape top of the test tape.
2. Turn over the test tape, measure the output frequency and the WOW value, and check the difference from the values of the step 1.

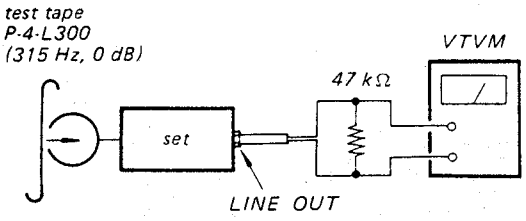
Adjustment Limits :

TAPE SPEED deviation:	within 2,990 to 3,010 Hz
TAPE SPEED fluctuating width:	within 2,990 to 3,010 Hz
WOW (WRMS):	0.04% or less

Playback Level Adjustment

Procedure:

Mode: playback



Adjust RV101 (L-CH) and RV201 (R-CH) to obtain the specified LINE OUT level.

Adjustment Limits :

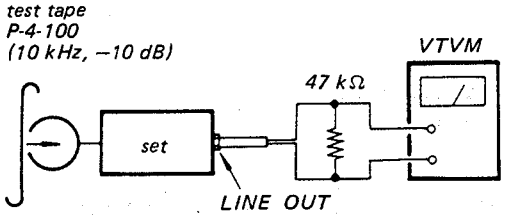
LINE OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)
Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

PB DOLBY NR Check

Procedure:

1. Mode: playback



2. Make sure that the output levels are different in DOLBY NR OFF, B, and C.

Adjustment Limits :

OFF → B	level difference	-1 to -3 dB
B → C	level difference	1 to 3 dB

Meter Level Check

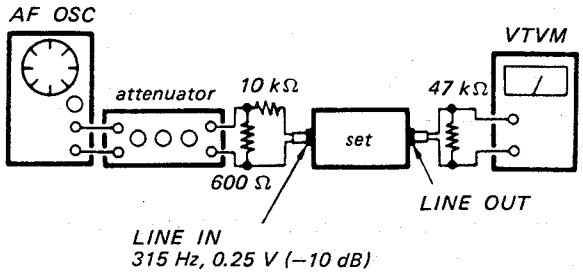
1. Apply 315 Hz 0.245V (-10dB) signal to LINE IN and adjust REC VOL so that LINE OUT level is 0.436V (-5dB), and then confirm that 0 VU segments in level meter light or flicker.
2. Adjust REC VOL to obtain 2.19V (9dB) output at LINE OUT and confirm that all segments in level meter light clearly.

MPX FILTER Check

Setting : DOLBY switch : OFF
MPX FILTER switch : OFF

Procedure :

1. Mode: stop



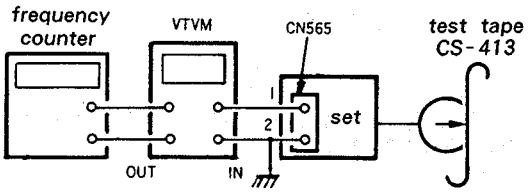
2. Apply 315 Hz, 0.25 V (−10 dB) signal and adjust REC LEVEL control so that the LINE OUT level is 0.44 V (−5 dB).
3. Set DOLBY switch to B or C and MPX FILTER switch ON. Confirm that the LINE OUT level is 0.39V to 0.49V (-5dB ± 1dB).
4. Apply 19kHz 0.25V (-10dB) signal and confirm that the LINE OUT level is 0.014V (-35dB) or less.

Adjustment Limits :

LINE OUT level
315Hz 0.39V − 0.49V (-5dB ± 1dB)
19kHz 0.014V (-35dB)

Erase Current Adjustment

1. Mode : record



2. Adjust RV573 so that the reading on VTVM is 105mV (erase current=105mA).

3. And then confirm that the reading on the frequency counter is 160kHz.

Adjustment Limits :

Erase current : 105mA to 110mA
Frequency : 160 ± 6kHz

Bias Current Adjustment

Note : This adjustment should be made before Record Bias Adjustment.

Setting : HX PRO switch : ON

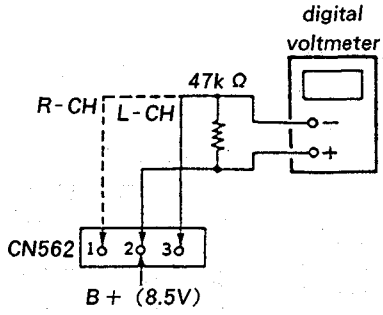
Procedure :

1. Preset RV152 (L-CH), RV252 (R-CH) and RV574 in the center position, and record with no signal.

2. Adjust T151 (L-CH) and T251 (R-CH) for minimum readings on the digital voltmeter.

Adjustment Limits :

120mV or less.



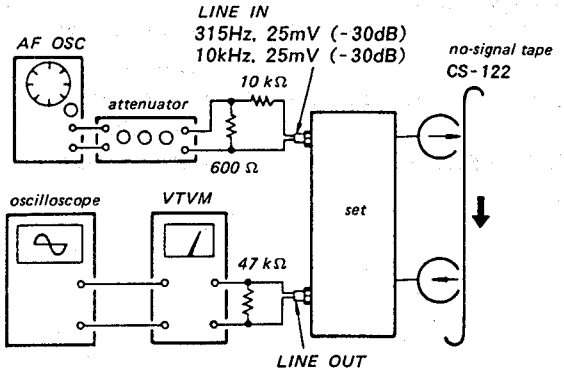
Record Bias and Record Level Adjustment

Setting:

REC LEVEL knob: standard record position
(See page 10.)
HX PRO switch : ON

Procedure:

1. Mode: simultaneous REC/PB



2. Adjust RV153 (L-CH) and RV253 (R-CH) so that the playback output level of 10kHz signal is 0.2dB to 0.8dB with respect to that of 315Hz. • • •Record Bias Adjustment.
3. Adjust RV151 (L-CH) and RV251 (R-CH) so that the playback output level of 315Hz is -25.3dB to -24.7dB. • • •Record Level Adjustment.

Normal Bias Adjustment

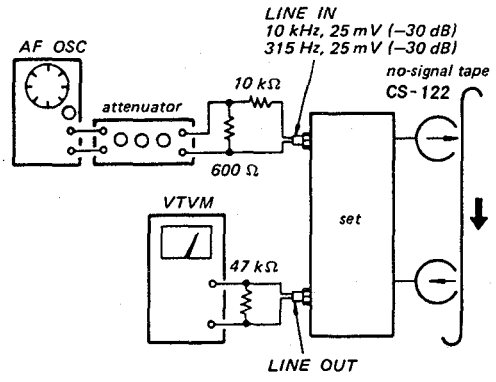
Setting:

REC LEVEL knob: standard record position

(See page 10.)

Procedure:

1. Mode: simultaneous REC/PB



2. Adjust RV152 (L-CH) and RV252 (R-CH) so that the output level of 10kHz is 0.2dB to 0.8dB with respect to that of 315Hz .

HX PRO Operation Check

Note : This check should be done after Normal Bias Adjustment in the same connection.

Procedure :

1. Mode : simultaneous REC/PB
2. Record and playback 10kHz 0.25V (-10dB) signal in both modes of HX PRO ON and OFF.
3. Confirm that the playback output level when ON is 1dB or more with respect to that when OFF.

Metal Bias Adjustment

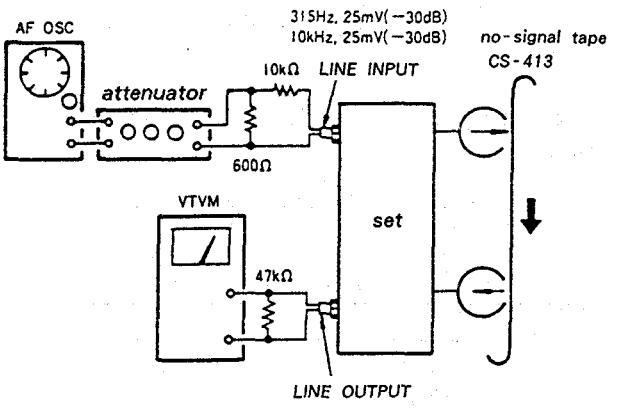
Setting :

REC LEVEL Knob : standard record position

(See page 10.)

Procedure :

1. Mode : simultaneous REC/PB



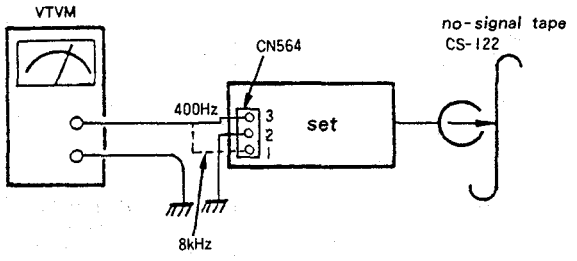
2. Adjust RV574 so that the playback output level of 10kHz in R-CH is 0.2dB to 0.8dB with respect to that of 315Hz.

Calibration Meter Adjustment

Setting : CALIBRATION switch : ON

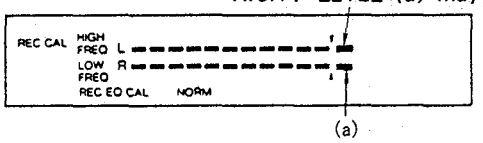
Procedure :

1. Mode : stop



2. Adjust RV572 for 400Hz and RV571 for 8kHz to obtain oscillation level within 10 ± 0.5dBs respectively.
3. Put the set in record mode and adjust RV131 (HIGH) so that HIGH FREQ segments in the CAL LEVEL meter light thoroughly up to 0 VU as shown in the figure below. Segment (a) may flicker.
4. Preset RV231 (LOW) so that segment (a) in LOW FREQ CAL LEVEL meter lights. Then adjust RV231 to the point where segment (a) goes out.

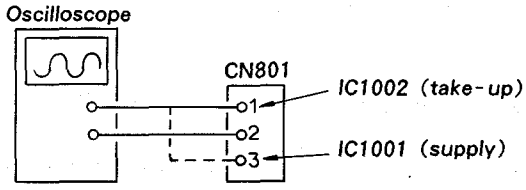
HIGH : LEVEL (a) may flicker.



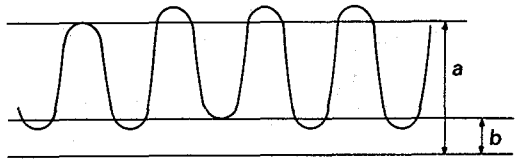
LOW : LEVEL (a) must not flicker.

Rotation Detect Check

1. Mode : FF or REW



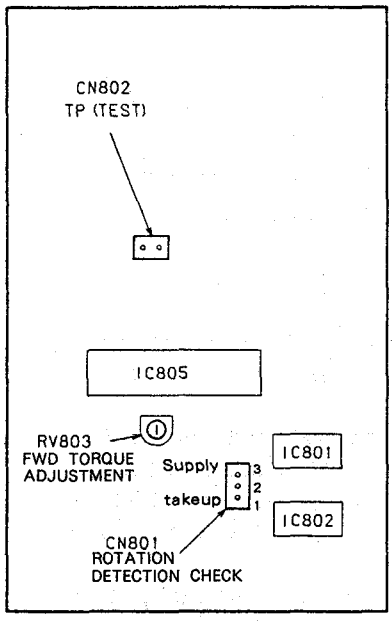
2. Waveform on the oscilloscope should be as shown below



$a \geqq 4.0V$

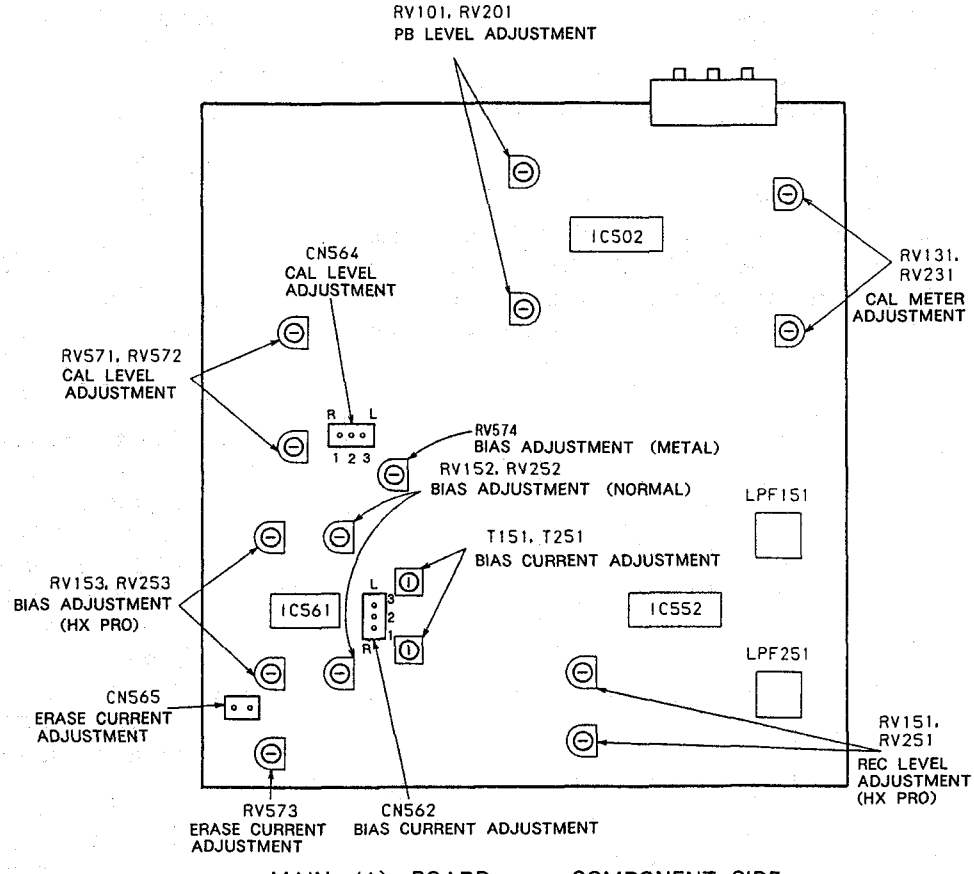
$b \leqq 1.0V$

Adjustment Parts Location :



MAIN (B) BOARD

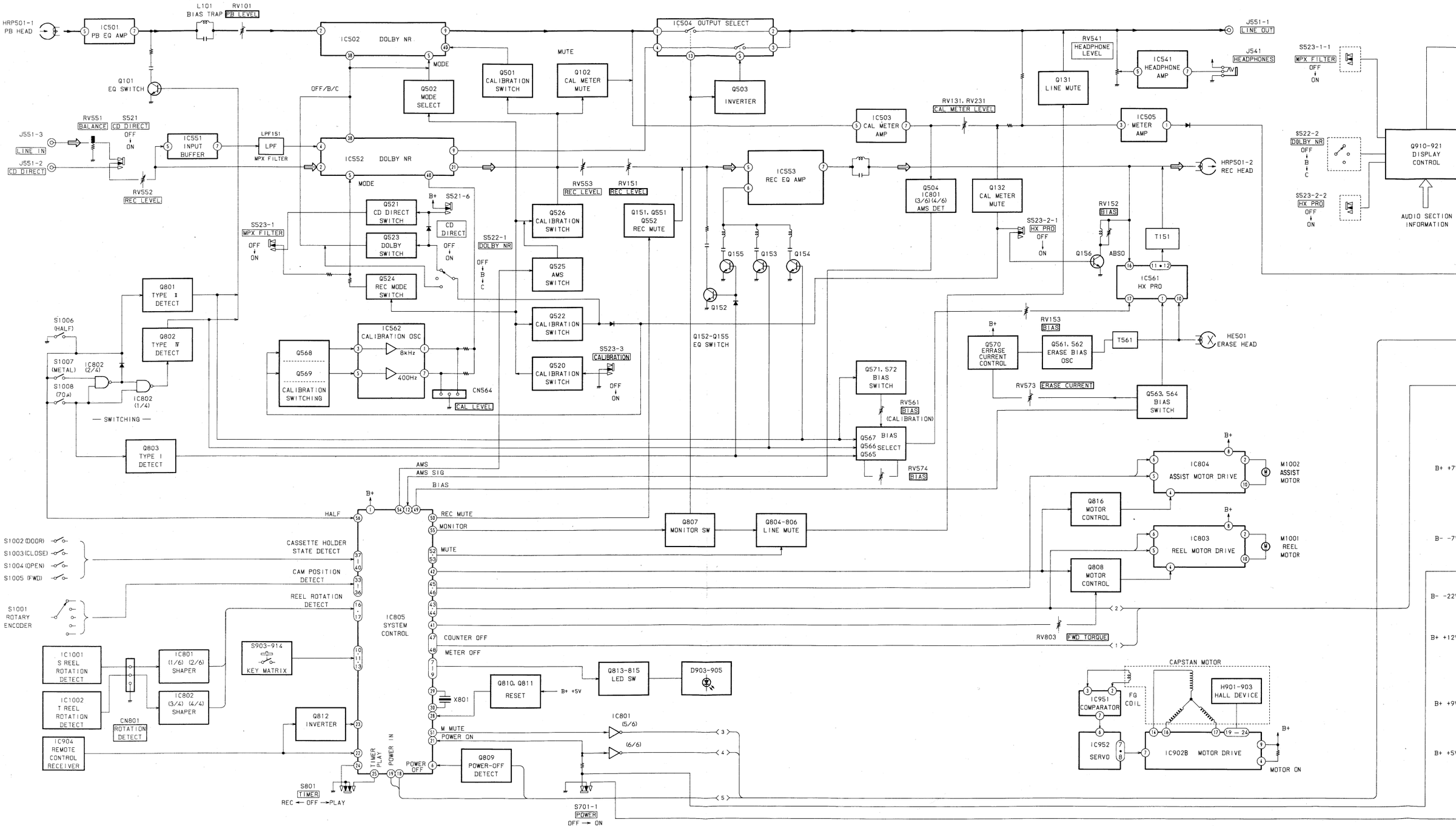
– COMPONENT SIDE –

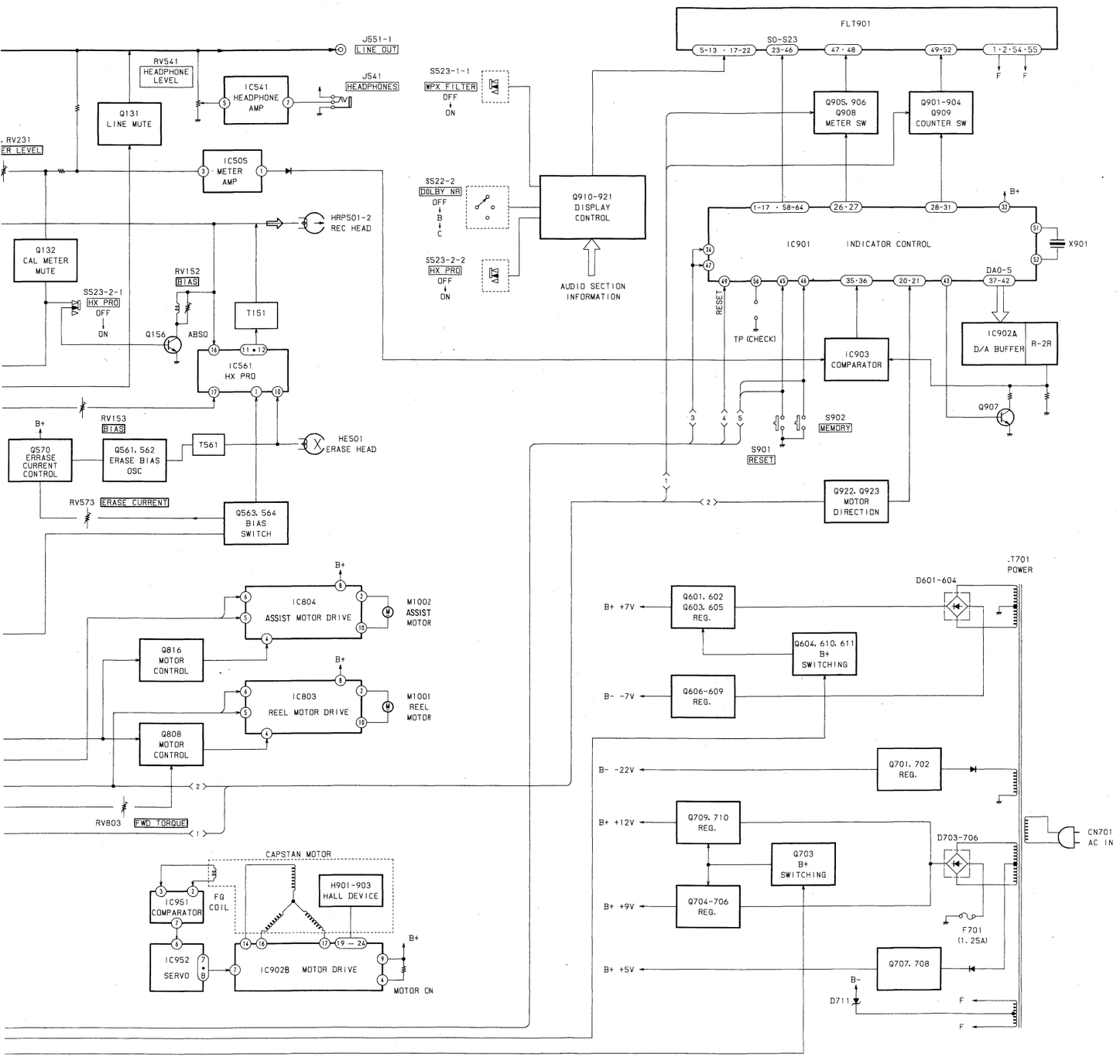


MAIN (A) BOARD – COMPONENT SIDE –

SECTION 4
DIAGRAMS

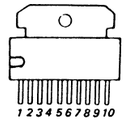
4-1. BLOCK DIAGRAM



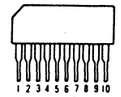


4-2. SEMICONDUCTOR LEAD LAYOUTS

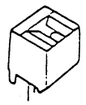
BA6219B



LB1641



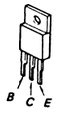
GP1U52XB



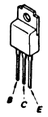
DTA114ES
DTB114ES
DTC114ES
DTC144ES
DTD114ES
2SA1317-STU
2SC2458-YGR

2SA1116A-L
2SA1409-LK
2SC945-P
2SC1815-Y

2SA985A
2SC2275A



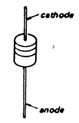
2SD1761-EF



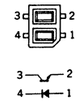
2SD2144S

2SK246-GR

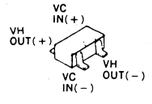
DZS6C3L
UZL-12H1
UZP8.2BB
1SS202-1



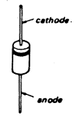
GP2S22B



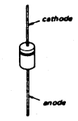
OH009



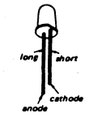
10E2N



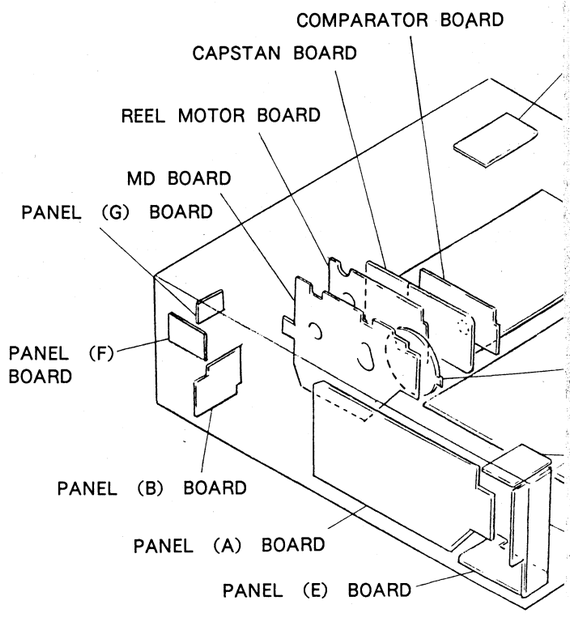
30DF2



SEL1210S
SEL1210S-C
SEL1910A-C

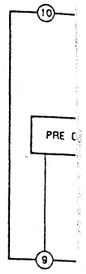


4-3. CIRCUIT BOARDS LOCATION

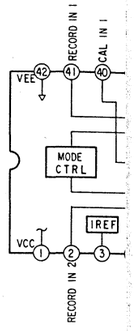


4-4. IC

IC561



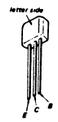
IC502, 552



CONDUCTOR LEAD LAYOUTS

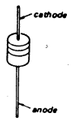
2SD1761-EF

2SD2144S

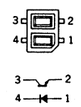


2SK246-GR

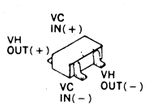
HZS6C3L
UZL-12H1
UZP8.2BB
1SS202-1



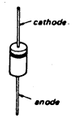
GP2S22B



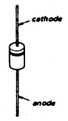
OH009



10E2N

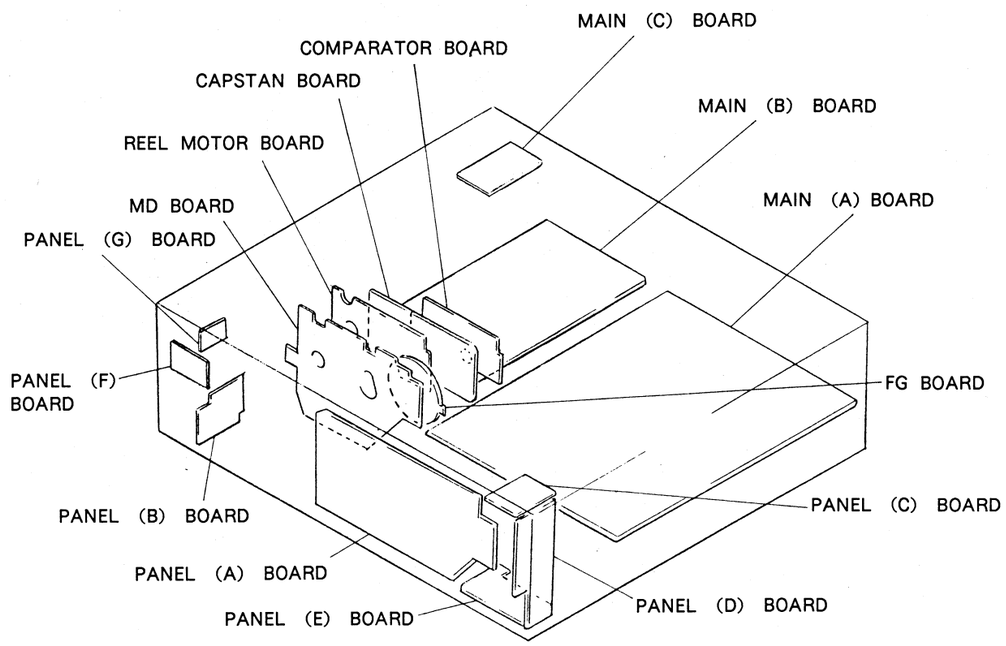


30DF2



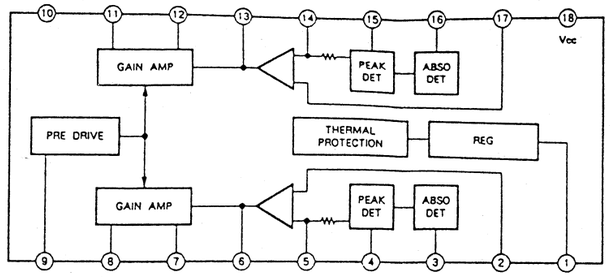
SEL1210S
SEL1210S-C
SEL1910A-C

4-3. CIRCUIT BOARDS LOCATION

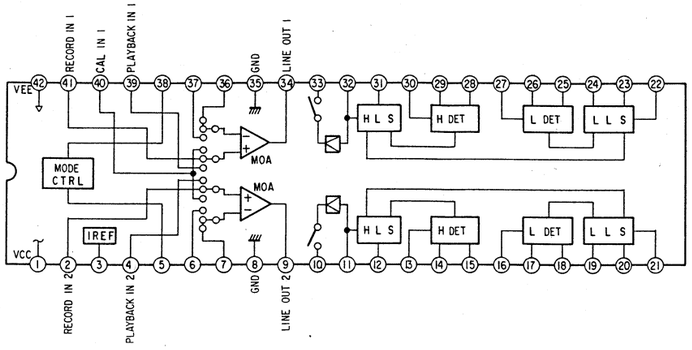


4-4. IC BLOCK DIAGRAMS

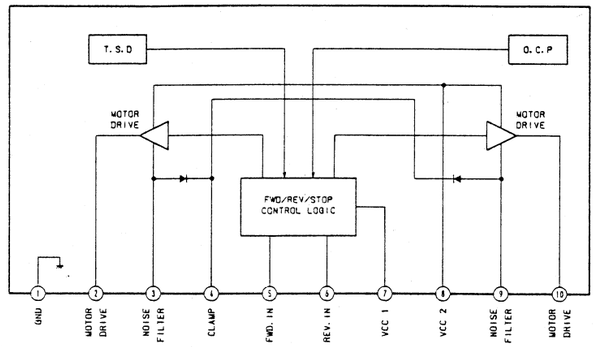
IC561 μPC1297CA



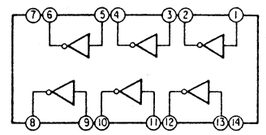
IC502, 552 CX20188



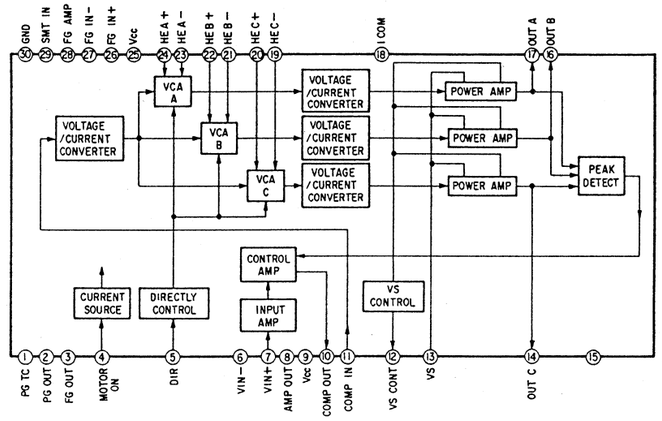
IC803 BA6219B
IC804 LB1641



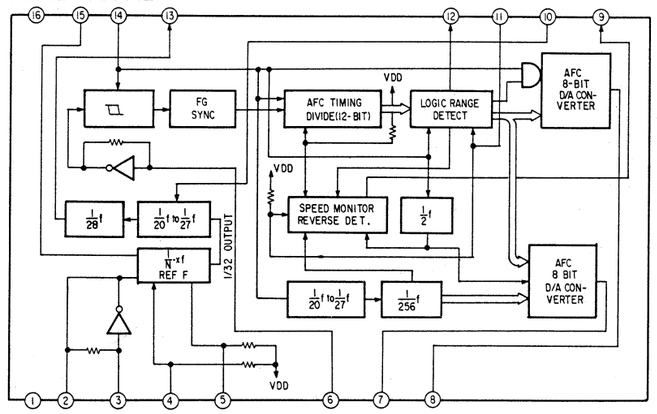
IC801, IC902A TC4069UBP



IC902B CX20174



IC952 TC9142P



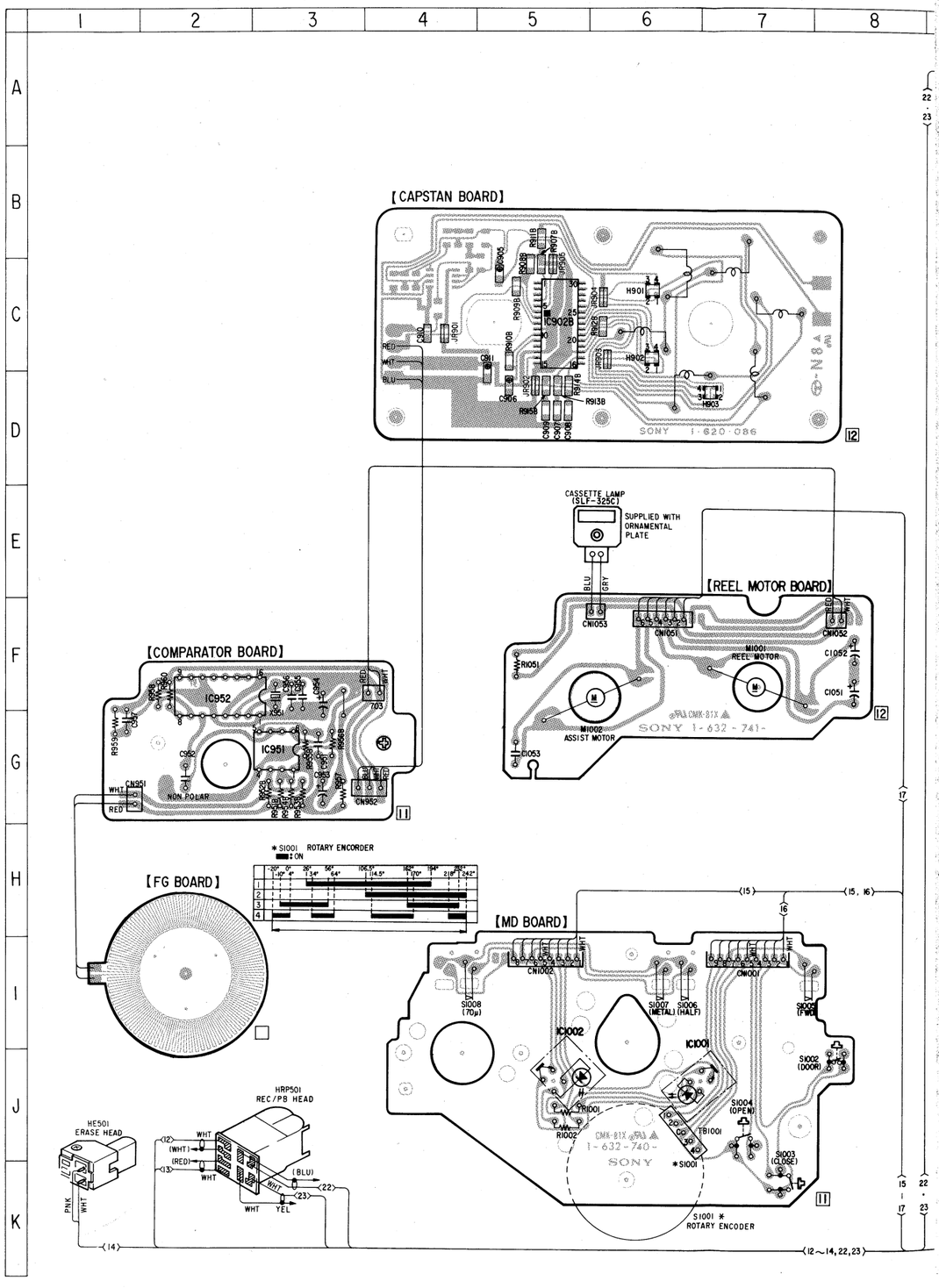
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D131	E-19	IC541	I-29	Q563	I-27
D231	F-20	IC551	H-20	Q564	I-27
D501	E-23	IC552	H-21	Q565	G-26
D502	D-19	IC553	H-24	Q566	G-26
D524	E-23	IC561	H-26	Q567	G-26
D525	J-19	IC562	F-26	Q568	E-27
D526	J-20	IC801	H-10	Q569	F-27
D561	J-26	IC802	H-10	Q570	J-26
D562	F-25	IC803	H-13	Q571	J-25
D563	F-25	IC804	I-13	Q572	J-25
D564	G-25	IC805	G-12	Q601	E-25
D565	G-25	IC902B	C-5	Q602	E-26
D566	G-25	IC951	G-3	Q603	E-26
D601	D-27	IC952	F-2	Q604	E-26
D602	D-27	IC1001	J-6	Q605	D-25
D603	C-27	IC1002	J-5	Q606	C-25
D604	C-27			Q607	B-26
D605	E-25	Q101	E-24	Q608	B-26
D606	E-26	Q102	D-21	Q609	B-25
D607	F-26	Q131	E-20	Q610	E-26
D701	C-12	Q132	E-19	Q611	E-27
D702	C-13	Q151	H-23	Q701	C-12
D703	B-14	Q152	H-23	Q702	C-13
D704	B-13	Q153	H-24	Q703	D-10
D705	B-13	Q154	G-23	Q704	C-10
D706	B-13	Q155	G-23	Q705	C-10
D707	C-10	Q156	G-25	Q706	D-10
D708	C-13	Q201	B-23	Q707	E-10
D709	C-12	Q202	C-21	Q708	F-9
D710	E-10	Q231	F-21	Q709	E-9
D711	C-13	Q232	G-20	Q710	D-10
D712	E-10	Q251	I-23	Q801	I-11
D713	D-10	Q252	I-23	Q802	I-11
D714	D-10	Q253	I-23	Q803	I-11
D715	D-10	Q254	I-23	Q804	H-12
D716	D-14	Q255	I-23	Q805	H-12
D717	B-11	Q256	I-25	Q806	H-12
D801	I-10	Q501	B-24	Q807	G-12
D802	H-12	Q502	F-23	Q808	H-12
D803	H-12	Q503	F-22	Q809	F-11
D804	G-10	Q504	E-19	Q810	F-13
D805	H-13	Q523	J-21	Q811	F-13
D806	H-13	Q524	J-19	Q812	F-12
		Q525	G-23	Q813	F-11
IC501	C-24	Q526	E-22	Q814	F-12
IC502	D-22	Q551	G-23	Q815	F-12
IC503	D-19	Q552	G-23	Q816	I-13
IC504	F-21	Q561	J-26		
IC505	F-19	Q562	J-26		

Note on Mounting Diagram:

- o—— : parts extracted from the component side.

4-5. PRINTED WIRING BOARDS – MAIN SECTION –



4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

【CAPSTAN BOARD】

SONY 1-620-086

【REEL MOTOR BOARD】

CASSETTE LAMP (SLF-325C)
SUPPLIED WITH ORNAMENTAL PLATE

M1001 REEL MOTOR
M1002 ASSIST MOTOR

SONY 1-632-741-

【MD BOARD】

IC1001
IC1002

SONY 1-632-740-

S1001 * ROTARY ENCODER

【MAIN(B) BOARD】

TO CHASSIS
TO PANEL(A) BOARD
IC801
IC802
IC803
IC804
IC805

【PANEL(C) BOARD】

【PANEL(D) BOARD】

【PANEL(E) BOARD】

RV551 BALANCE
RV553 REC LEVEL

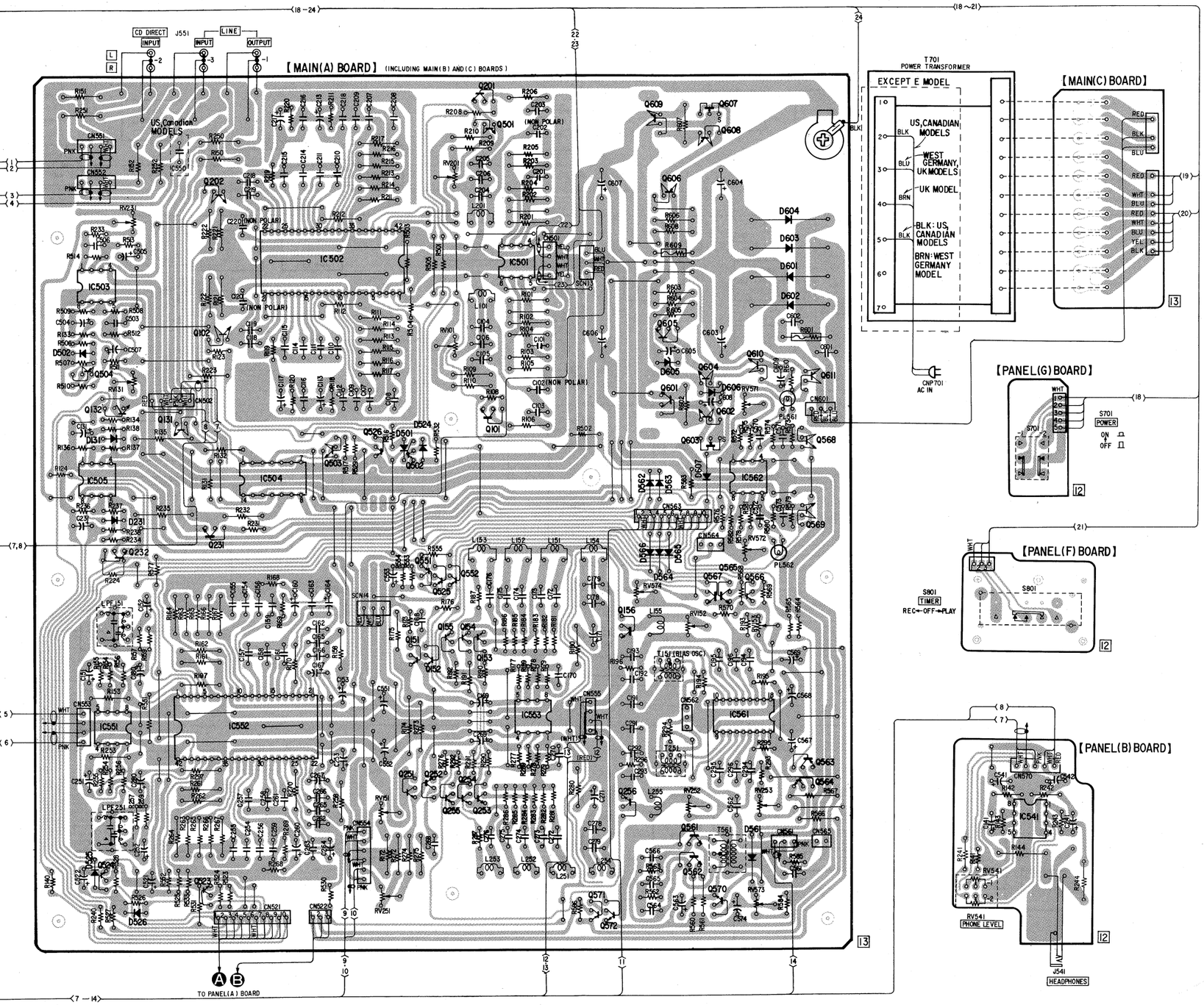
【MAIN(A) BOARD】 (INCLUDING MAIN(B) AND

US,Canadian MODELS

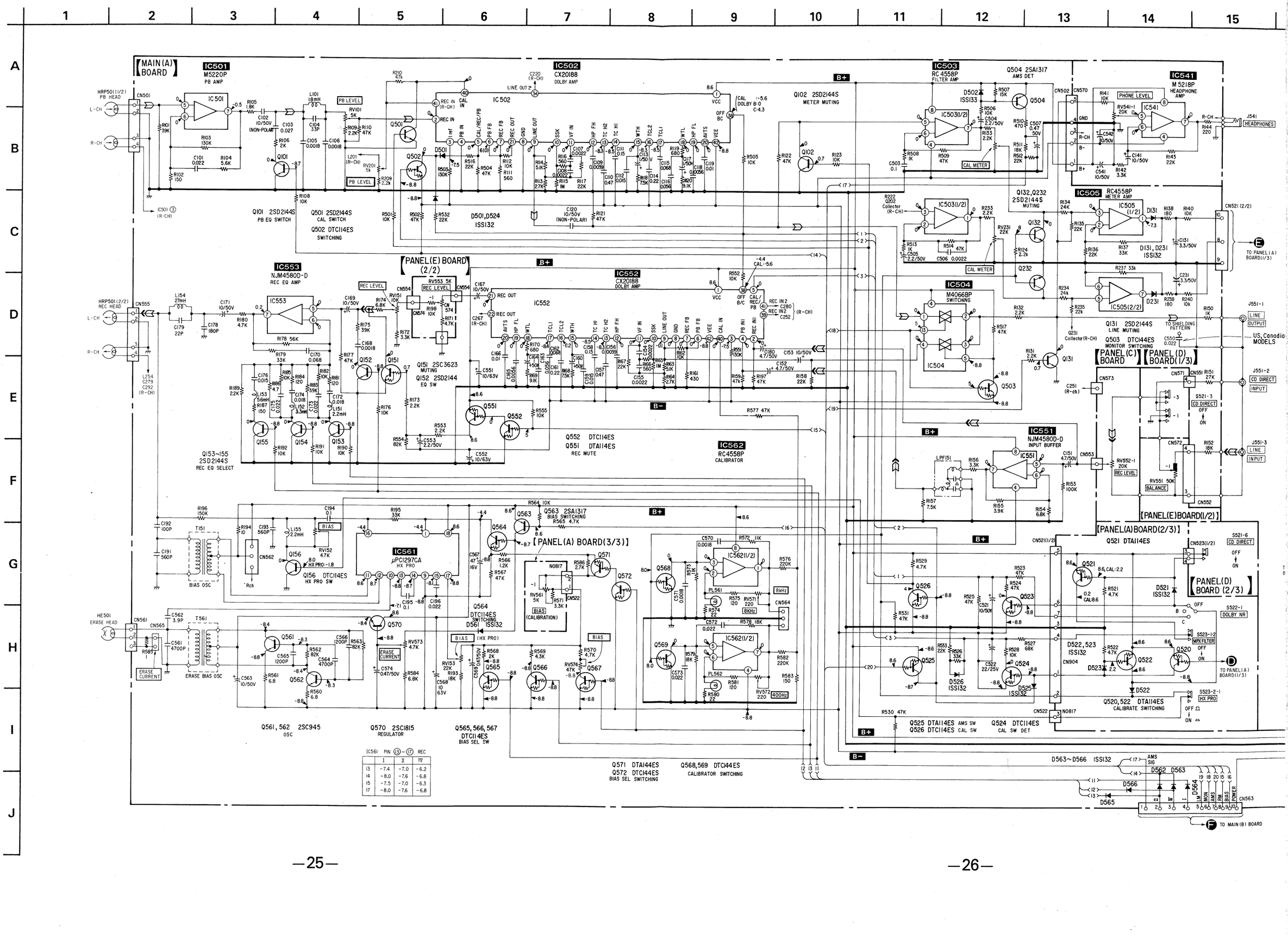
IC501
IC502
IC503
IC504
IC505
IC551
IC552

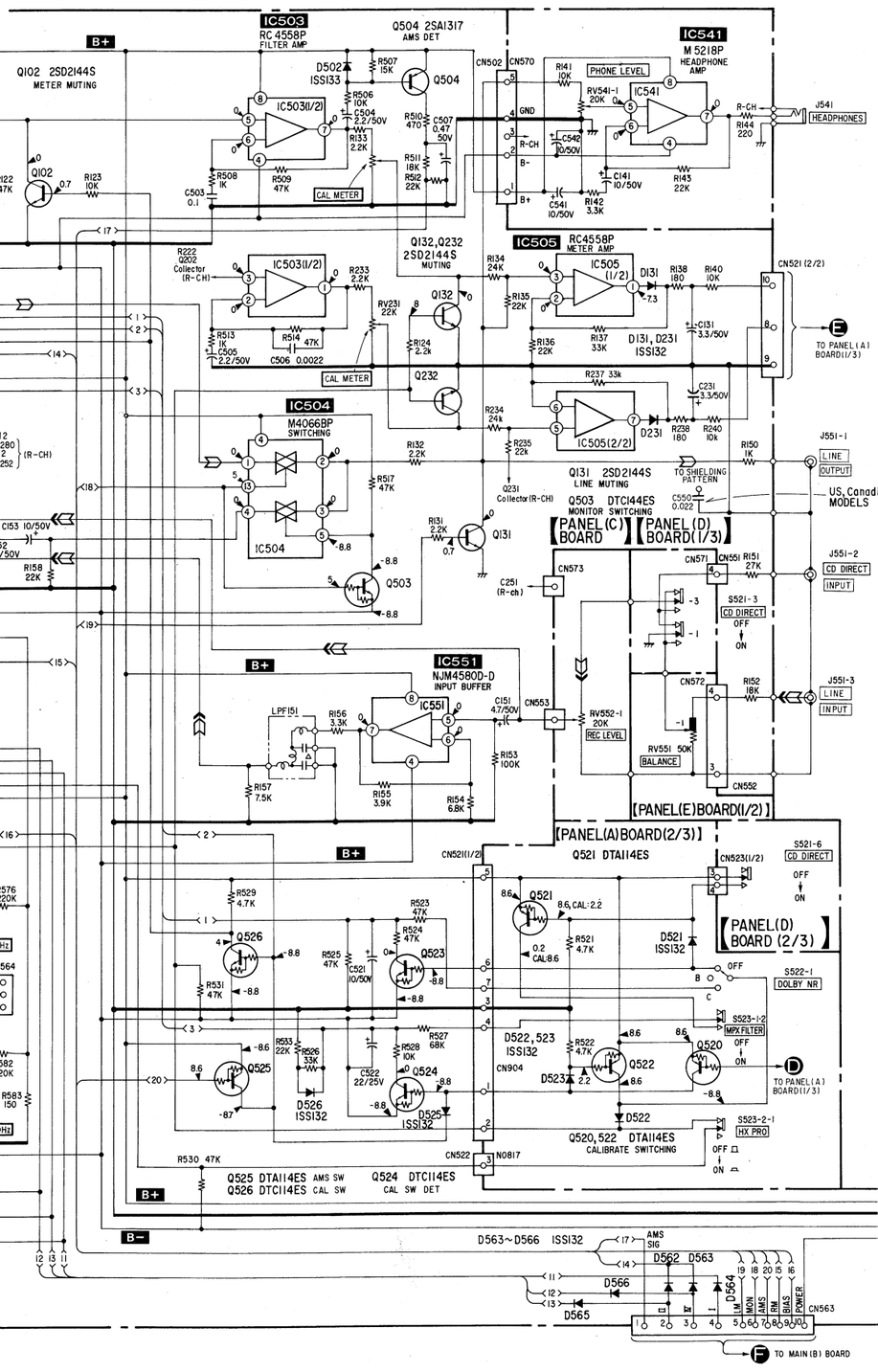
TO PANEL(A) BOARD

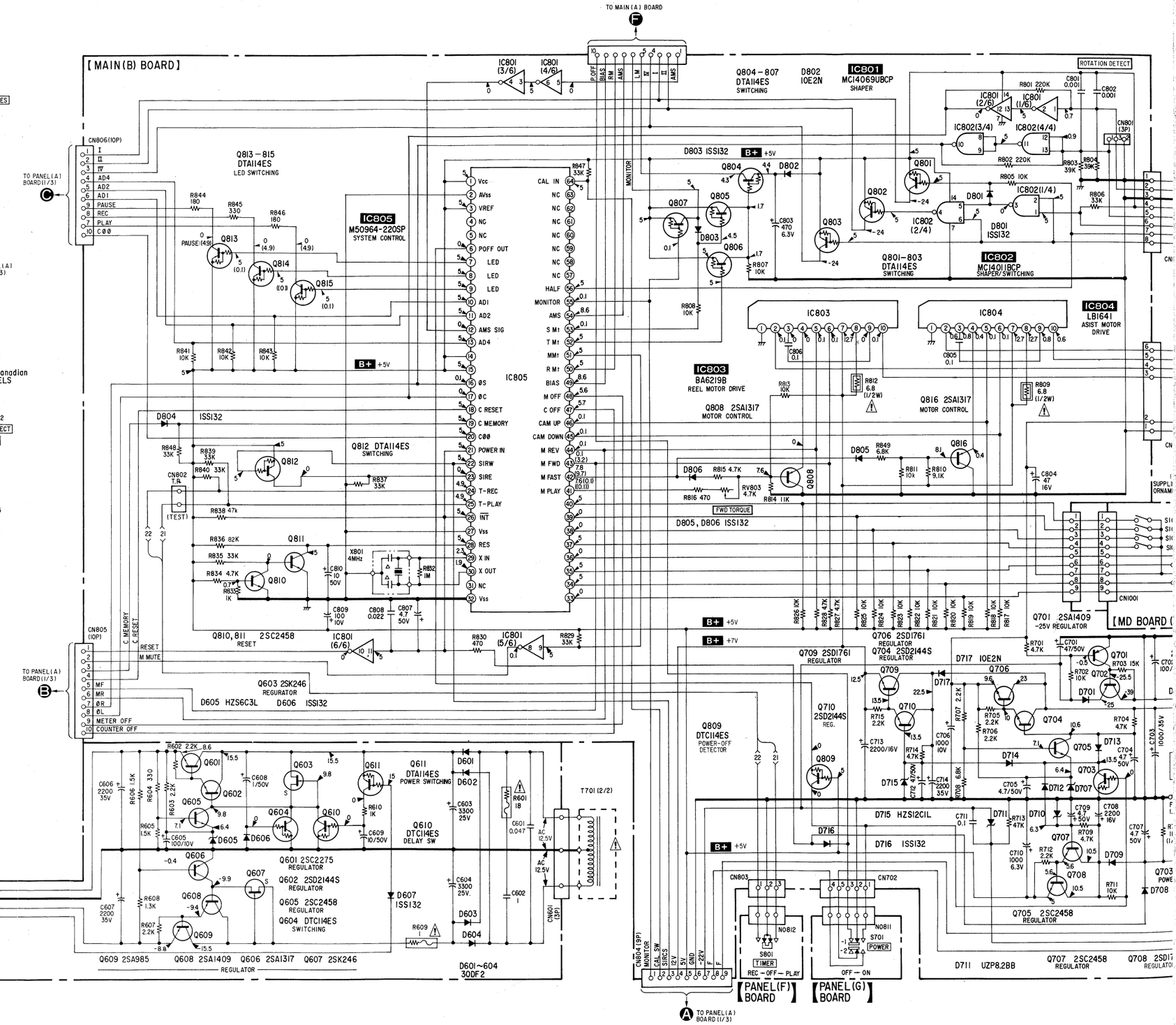
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

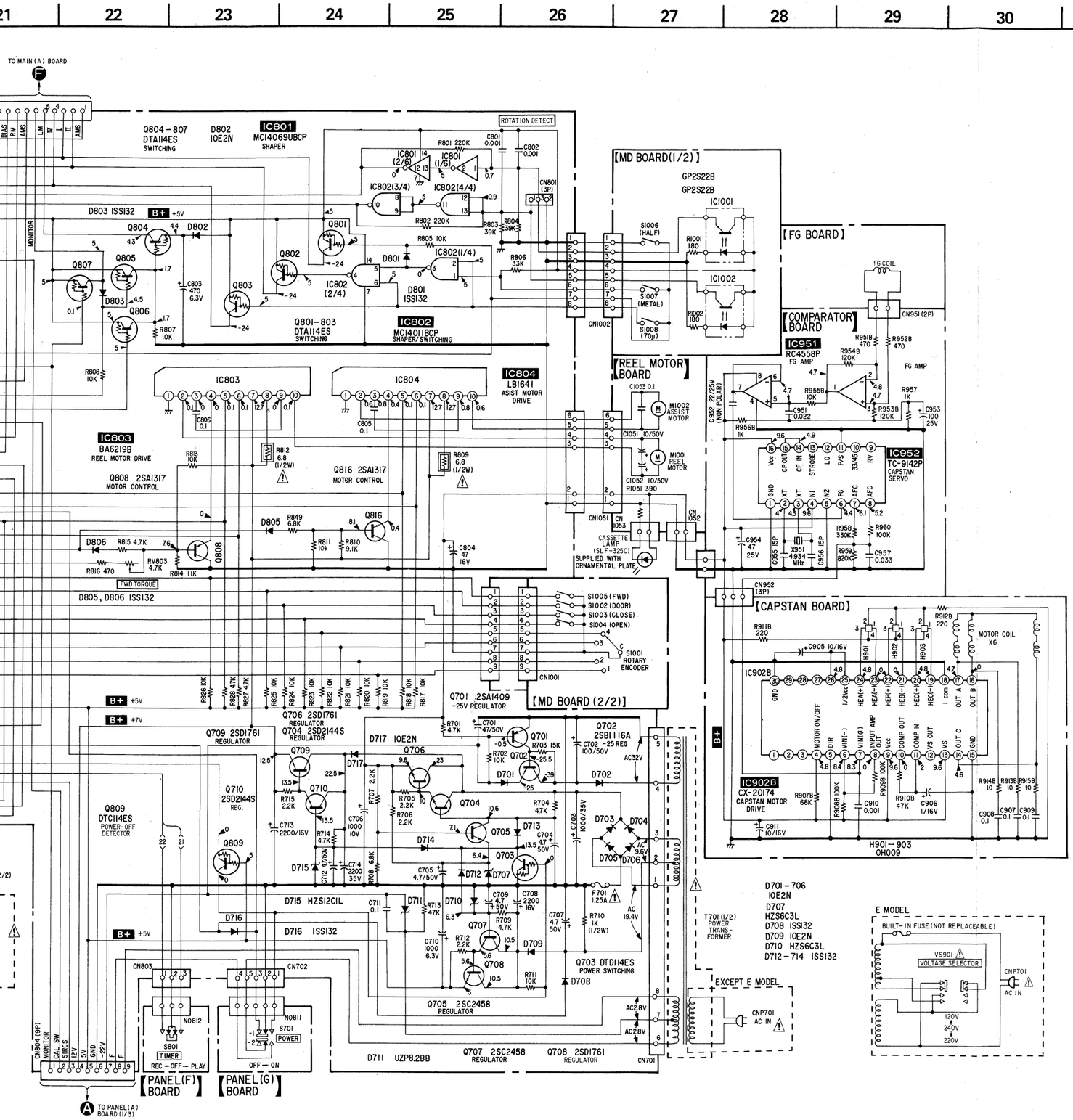


4-6. SCHEMATIC DIAGRAM – MAIN SECTION –




IC503
RC4558P
FILTER AMP
Q504 2SA1317
AMS DET
IC541
M 5218P
HEADPHONE AMP
PHONE LEVEL
J541
HEADPHONES
IC505 RC4558P
METER AMP
Q132,Q232
2SD2144S
MUTING
Q131, Q231
LINE MUTING
Q503 DTC144ES
MONITOR SWITCHING
IC504
M4066BP
SWITCHING
CAL METER
【PANEL(C) BOARD】
【PANEL (D) BOARD(1/3)】
【PANEL(E)BOARD(1/2)】
【PANEL(A)BOARD(2/3)】
【PANEL(D) BOARD (2/3)】
IC551
NJM4580D-D
INPUT BUFFER
REC LEVEL
BALANCE
US, Canadian MODELS
LINE OUTPUT
CD DIRECT INPUT
LINE INPUT
Q521 DTA114ES
Q525 DTA114ES AMS SW
Q526 DTC114ES CAL SW
Q524 DTC114ES
CAL SW DET
Q520,522 DTA114ES
CALIBRATE SWITCHING
D522,523 ISS132
D526 ISS132
D525 ISS132
D563~D566 ISS132
TO MAIN (B) BOARD


TO MAIN (A) BOARD
【MAIN(B) BOARD】
IC801 (3/6)
IC801 (4/6)
Q804-807 DTA114ES SWITCHING
D802 10E2N
IC801 MCI4069UBCP SHAPER
ROTATION DETECT
D803 ISS132
Q801-803 DTA114ES SWITCHING
IC802 MCI4011BCP SHAPER/SWITCHING
IC803 BA6219B REEL MOTOR DRIVE
IC804 LB1641 ASIST MOTOR DRIVE
Q808 2SA1317 MOTOR CONTROL
Q816 2SA1317 MOTOR CONTROL
FWD TORQUE
D805, D806 ISS132
Q813-815 DTA114ES LED SWITCHING
IC805 M50964-220SP SYSTEM CONTROL
Q812 DTA114ES SWITCHING
Q810, 811 2SC2458 RESET
Q603 2SK246 REGURATOR
D605 HZS6C3L D606 ISS132
Q611 DTA114ES POWER SWITCHING
Q610 DTC114ES DELAY SW
Q601 2SC2275 REGULATOR
Q602 2SD2144S REGULATOR
Q605 2SC2458 REGULATOR
Q604 DTC114ES SWITCHING
Q609 2SA985 Q608 2SA1409 Q606 2SA1317 Q607 2SK246 REGULATOR
D601~604 30DF2
T701 (2/2)
Q809 DTC114ES POWER-OFF DETECTOR
Q710 2SD2144S REG.
Q709 2SD1761 REGULATOR
Q706 2SD1761 REGULATOR
Q704 2SD2144S REGULATOR
Q701 2SA1409 -25V REGULATOR
D715 HZS12C1L
D716 ISS132
D711 UZP8.2BB
Q705 2SC2458 REGULATOR
Q707 2SC2458 REGULATOR
【MD BOARD (
【PANEL(F) BOARD】
【PANEL(G) BOARD】
TO PANEL(A) BOARD(1/3)



Note on Schematic Diagram:

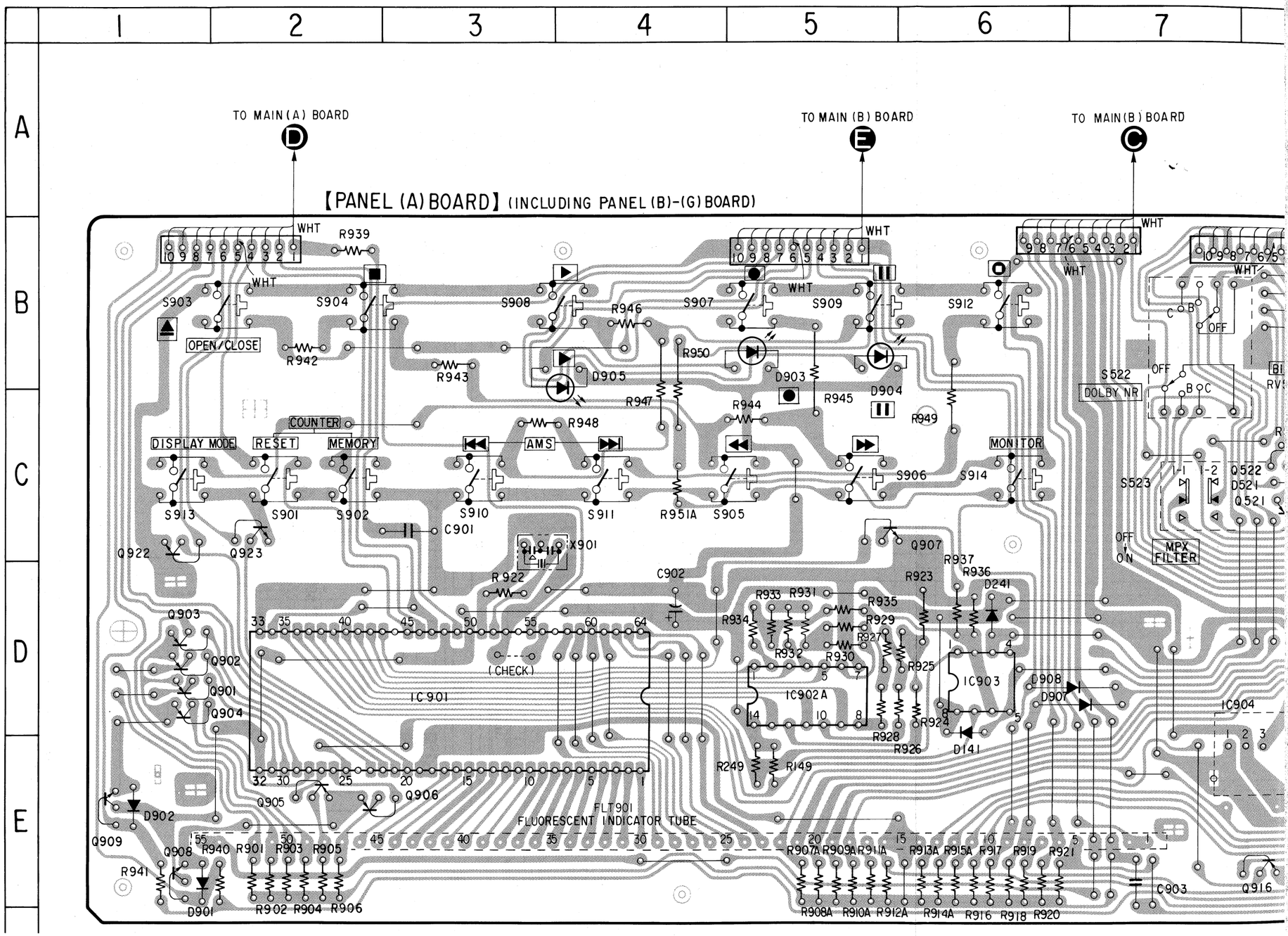
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from 201 to 299.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line
- B– : B– Line
- : adjustment for repair
- Voltage and waveforms are dc with respect to ground under no signal (detuned) conditions.
  no mark : STOP
  ( ) : PLAY
  (( )) : REC
- Voltages are taken with a VOM (Input impedance 10 MΩ) Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB
  : REC

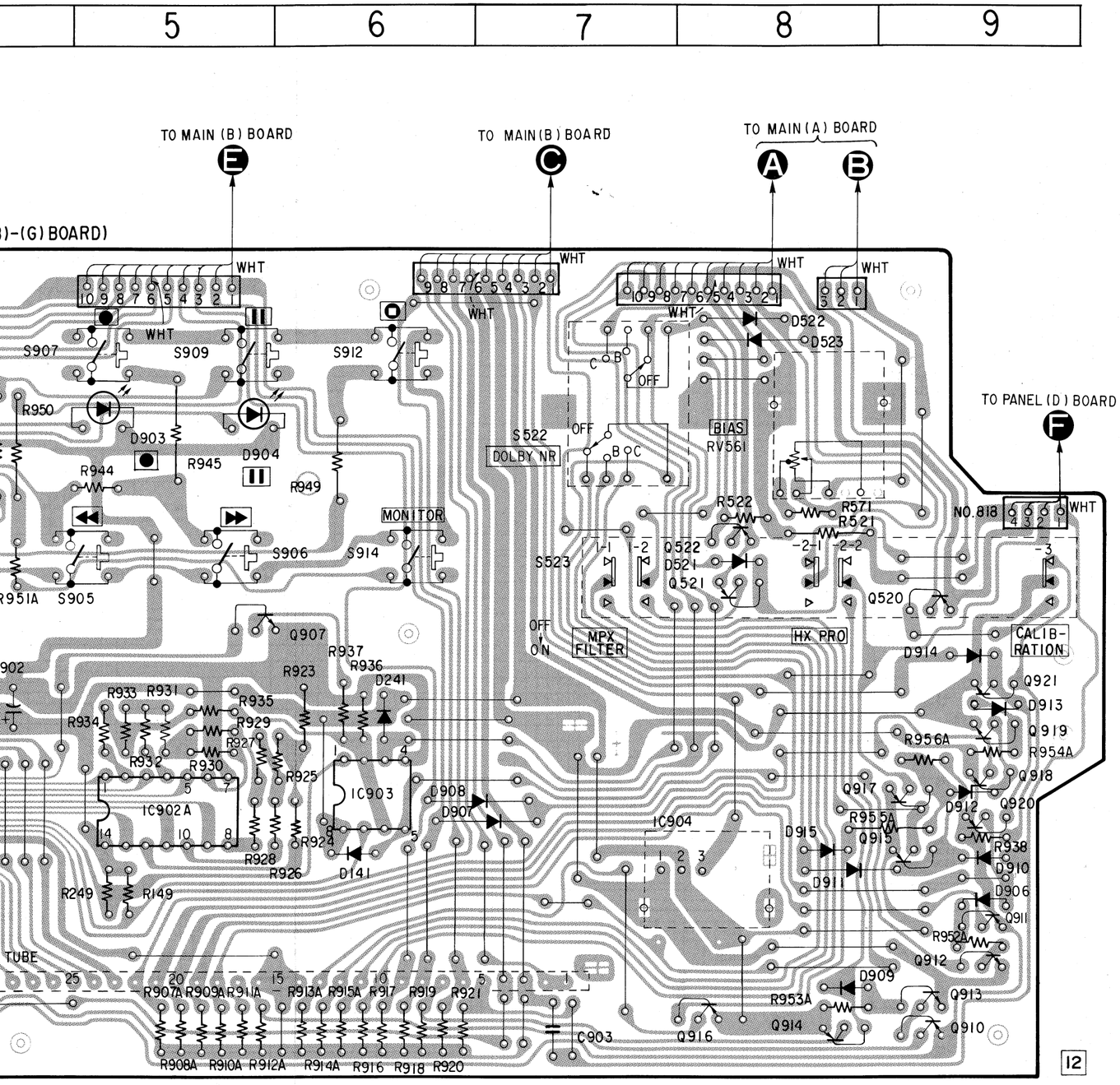
• **Semiconductor Location**

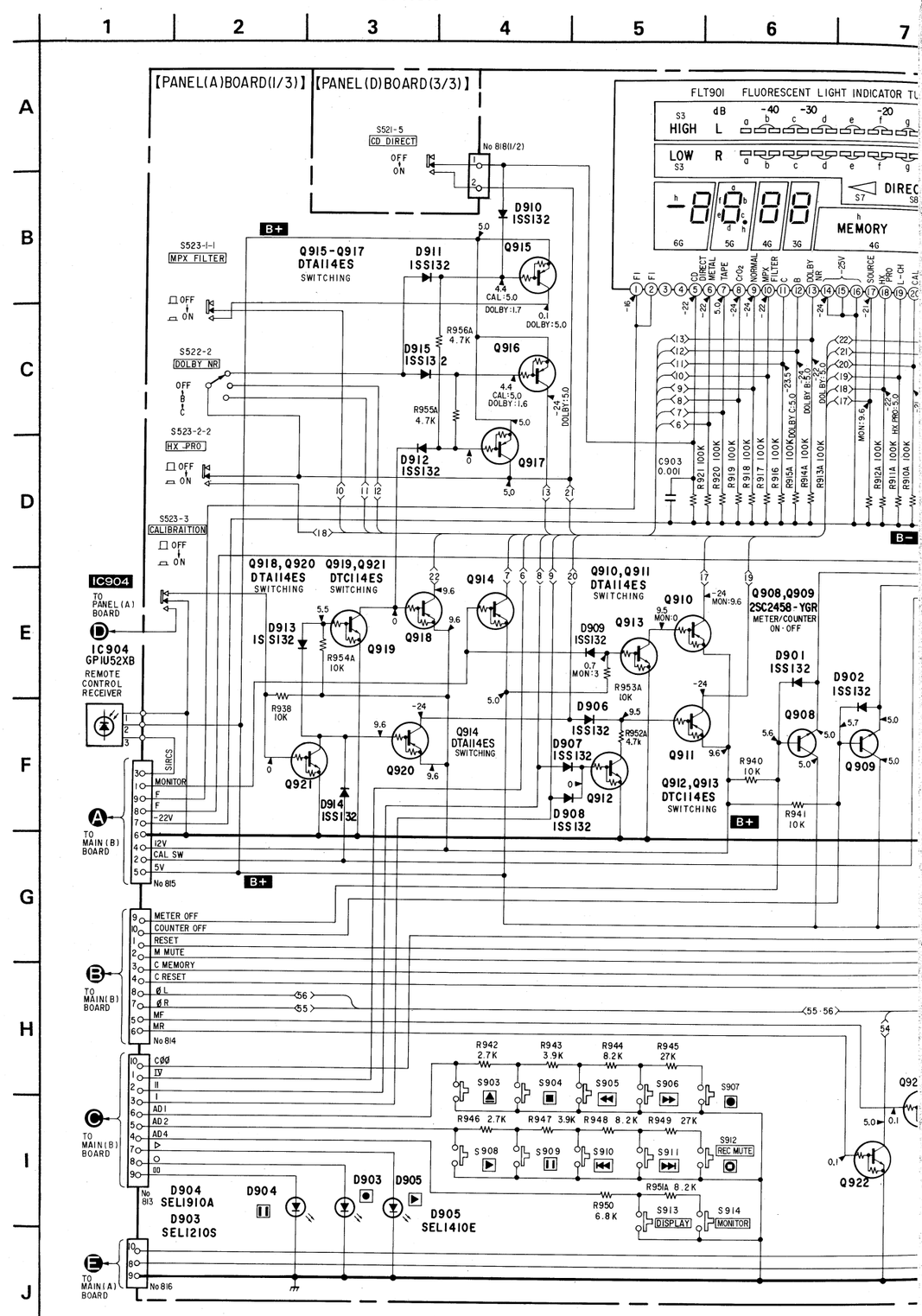
Ref. No.	Location
D141	E-6
D521	C-8
D522	B-8
D523	B-8
D901	E-1
D902	E-1
D903	B-5
D904	C-5
D905	B-4
D906	E-9
D907	D-6
D908	D-6
D909	E-8
D910	E-9
D911	E-8
D912	D-9
D913	D-9
D914	D-9
D915	D-8
IC901	D-3
IC902A	D-5
IC903	D-6
IC904	E-8
Q520	C-9
Q521	C-8
Q522	C-8
Q901	D-1
Q902	D-1
Q903	D-1
Q904	D-1
Q905	E-2
Q906	E-3
Q907	C-6
Q908	E-1
Q909	E-1
Q910	E-9
Q911	E-9
Q912	E-9
Q913	E-9
Q914	E-8
Q915	D-8
Q916	E-8
Q917	D-8
Q918	D-9
Q919	D-9
Q920	D-9
Q921	D-9
Q922	C-1
Q923	C-2



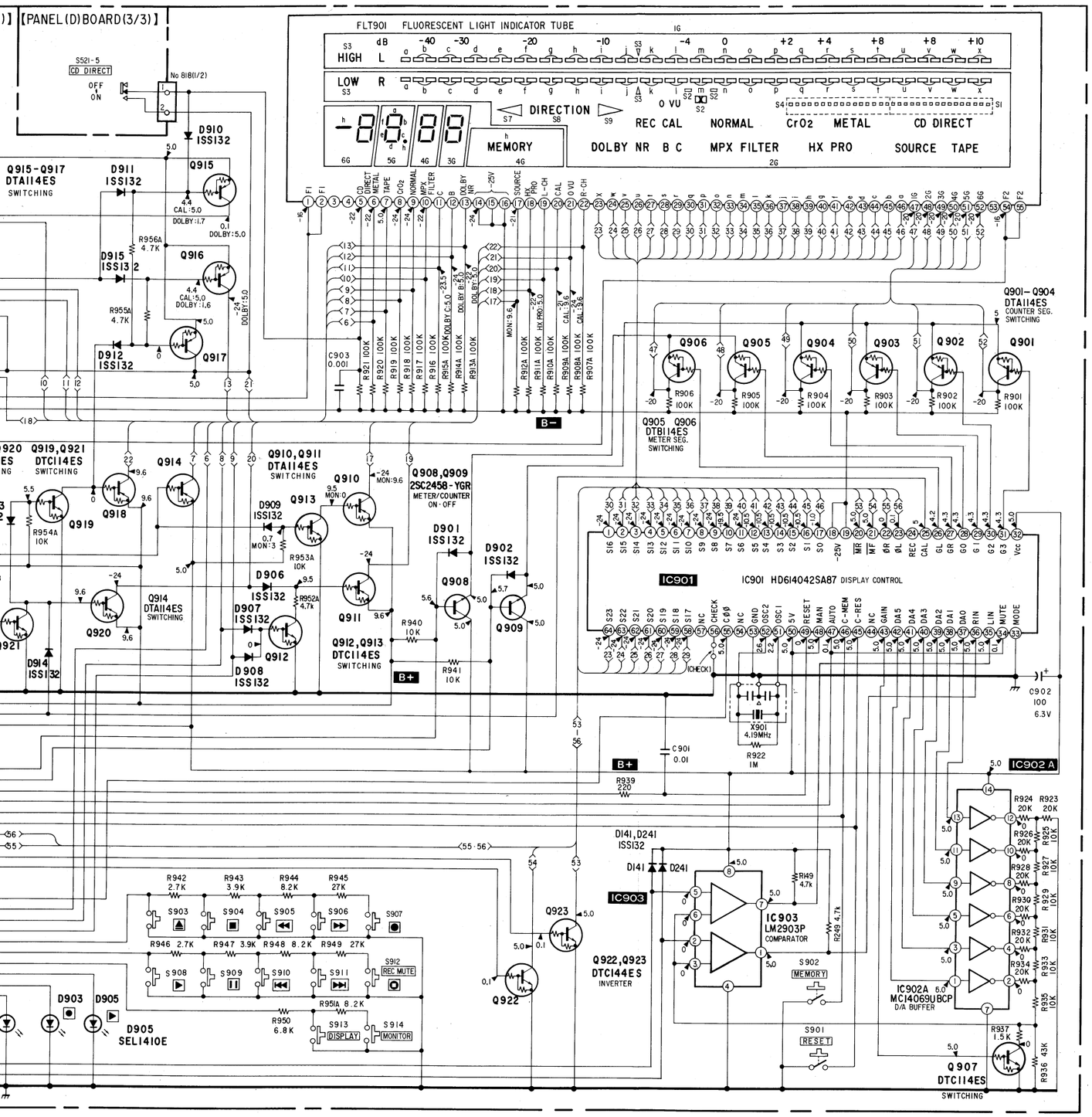
Note on Mounting Diagram:

- ○—— : parts extracted from the component side.


5
6
7
8
9
TO MAIN (B) BOARD
TO MAIN (B) BOARD
TO MAIN (A) BOARD
TO PANEL (D) BOARD
E
C
A
B
F
)-(G) BOARD)
WHT
S907
S909
S912
R950
D903
D904
R945
R944
R949
MONITOR
S906
S914
R951A
S905
Q907
R937
R936
R923
D241
R933
R931
R935
R934
R929
R927
R932
R930
R925
IC902A
IC903
D908
D907
R924
R928
R926
D141
R249
R149
TUBE
R907A R909A R911A – R913A R915A R917 R919 R921
R908A R910A R912A R914A R916 R918 R920
C903
S522
DOLBY NR
OFF
BIAS
RV561
D522
D523
R522
R571
R521
S523
Q522
D521
Q521
Q520
MPX
FILTER
HX PRO
CALIB-
RATION
D914
Q921
D913
Q919
R956A
R954A
Q918
Q917
D912
Q920
R955A
Q915
R938
D910
D915
D911
D906
Q911
R952A
Q912
D909
R953A
Q913
Q914
Q916
Q910
IC904
NO.818
12


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
【PANEL(A)BOARD(1/3)】
【PANEL(D)BOARD(3/3)】
FLT901 FLUORESCENT LIGHT INDICATOR TU
S521-5
CD DIRECT
OFF
ON
No 818(1/2)
D910
ISS132
B+
S523-1-1
MPX FILTER
Q915-Q917
DTA114ES
SWITCHING
D911
ISS132
Q915
S522-2
DOLBY NR
D915
ISS132
Q916
S523-2-2
HX PRO
D912
ISS132
Q917
S523-3
CALIBRAITION
C903
0.001
R921 100K
R920 100K
R919 100K
R918 100K
R917 100K
R916 100K
R955A 100K
R914A 100K
R913A 100K
R912A 100K
R911A 100K
R910A 100K
IC904
TO PANEL (A) BOARD
IC904
GP1U52XB
REMOTE CONTROL RECEIVER
Q918,Q920
DTA114ES
SWITCHING
Q919,Q921
DTC114ES
SWITCHING
Q914
Q910,Q911
DTA114ES
SWITCHING
Q908,Q909
2SC2458-YGR
METER/COUNTER ON-OFF
D913
ISS132
Q919
R954A
10K
Q918
D909
ISS132
Q913
D901
ISS132
D902
ISS132
R953A
10K
D906
ISS132
Q914
DTA114ES
SWITCHING
Q920
Q908
Q907
ISS132
Q912
Q911
Q912,Q913
DTC114ES
SWITCHING
R940
10K
R941
10K
Q909
D908
ISS132
D914
ISS132
Q921
R938
10K
SIRCS
MONITOR
F
F
-22V
12V
CAL SW
5V
No 815
TO MAIN (B) BOARD
METER OFF
COUNTER OFF
RESET
M MUTE
C MEMORY
C RESET
ØL
ØR
MF
MR
No 814
TO MAIN(B) BOARD
CØØ
IV
II
I
AD1
AD2
AD4
No 813
D904
SEL1910A
D903
SEL1210S
D904
D903
D905
D905
SEL1410E
R942 2.7K
R943 3.9K
R944 8.2K
R945 27K
S903
S904
S905
S906
S907
R946 2.7K
R947 3.9K
R948 8.2K
R949 27K
S908
S909
S910
S911
S912
REC MUTE
R951A 8.2K
R950 6.8K
S913
DISPLAY
S914
MONITOR
Q922
TO MAIN(A) BOARD
No 816

3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- B− : B− Line
- ▭ : adjustment for repair
- Voltages are taken with a VOM (Input impedance 10 MΩ) Voltage variations may be noted due to normal production tolerances.

SECTION 5
EXPLODED VIEWS

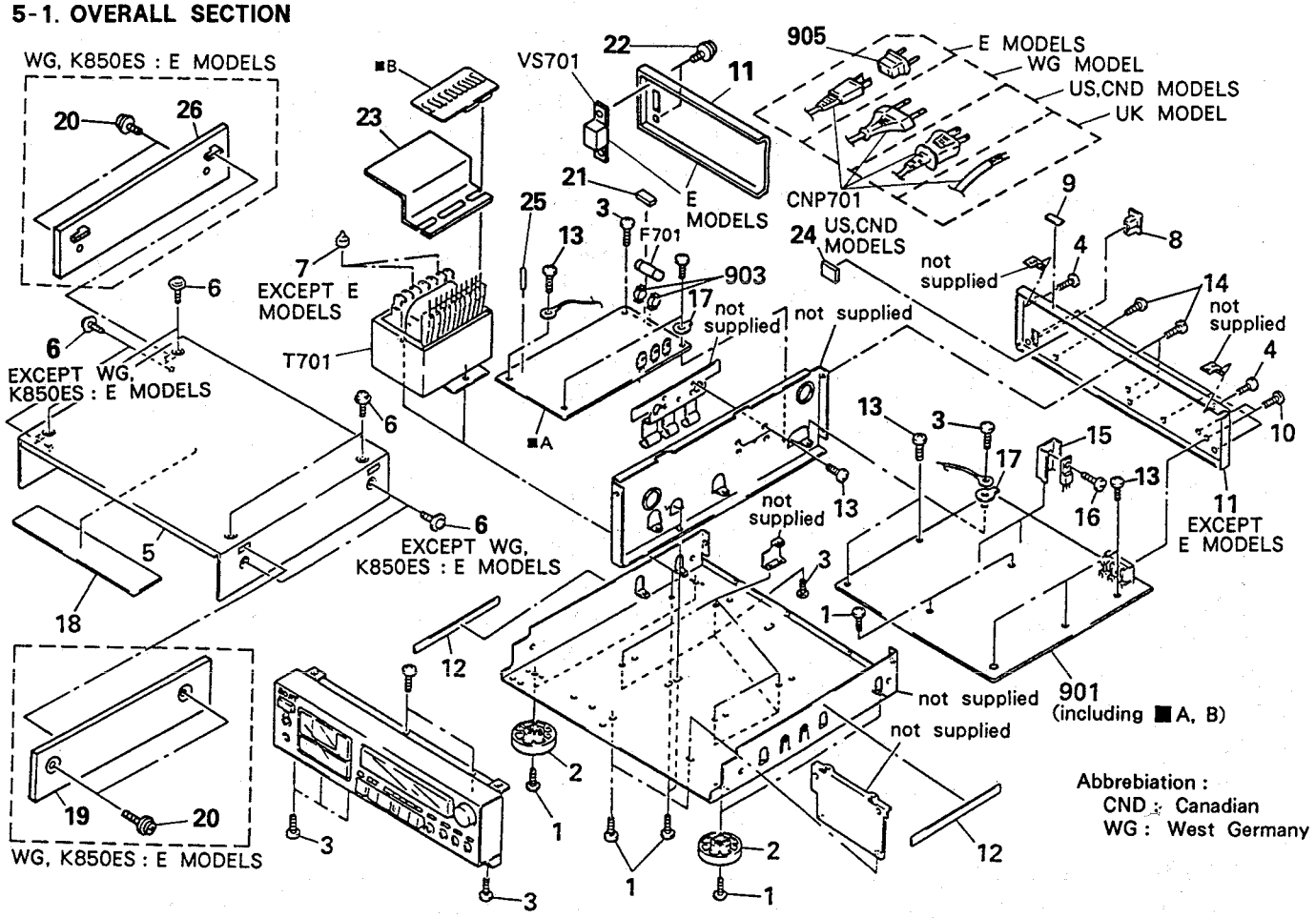
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

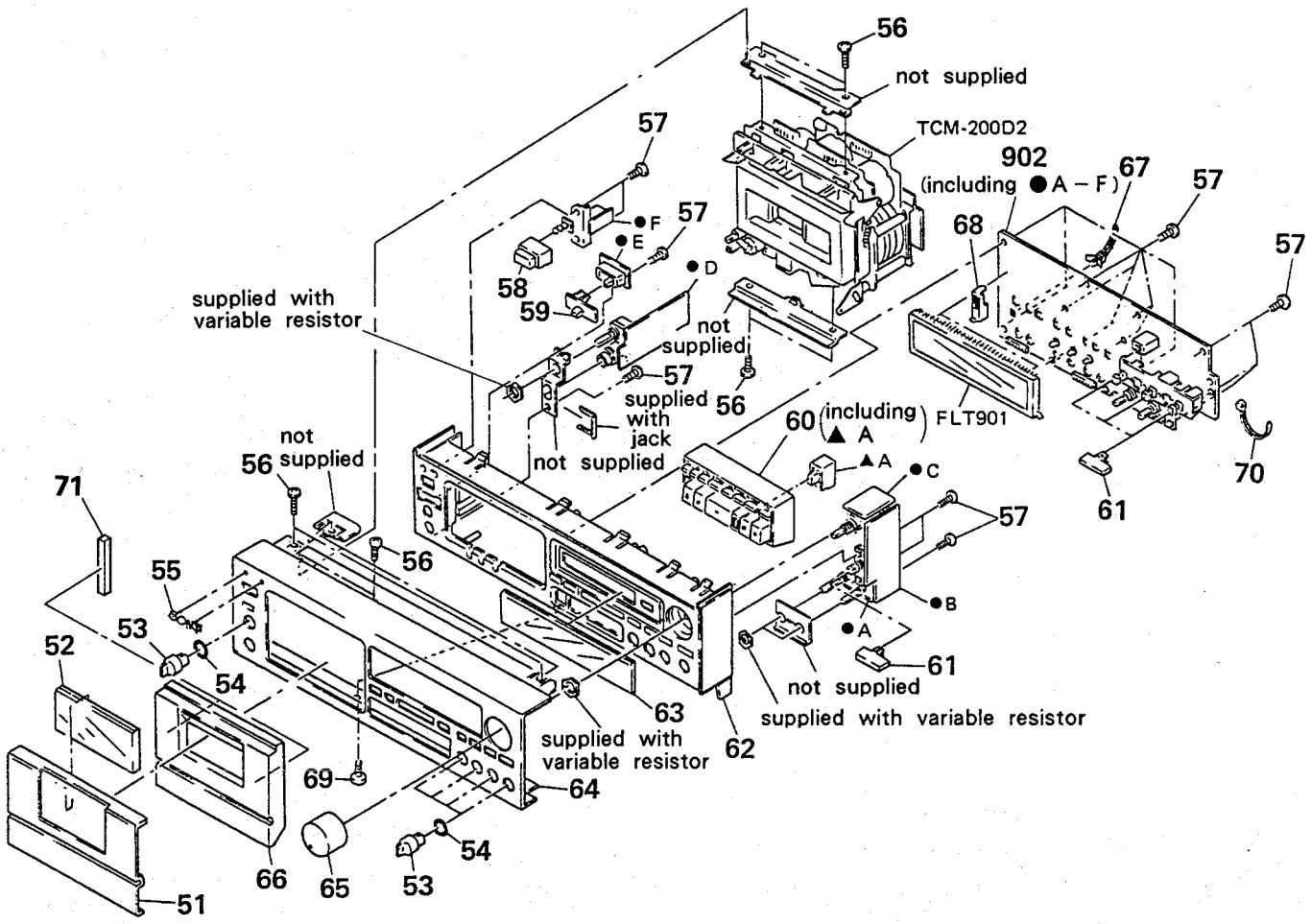
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

5-1. OVERALL SECTION



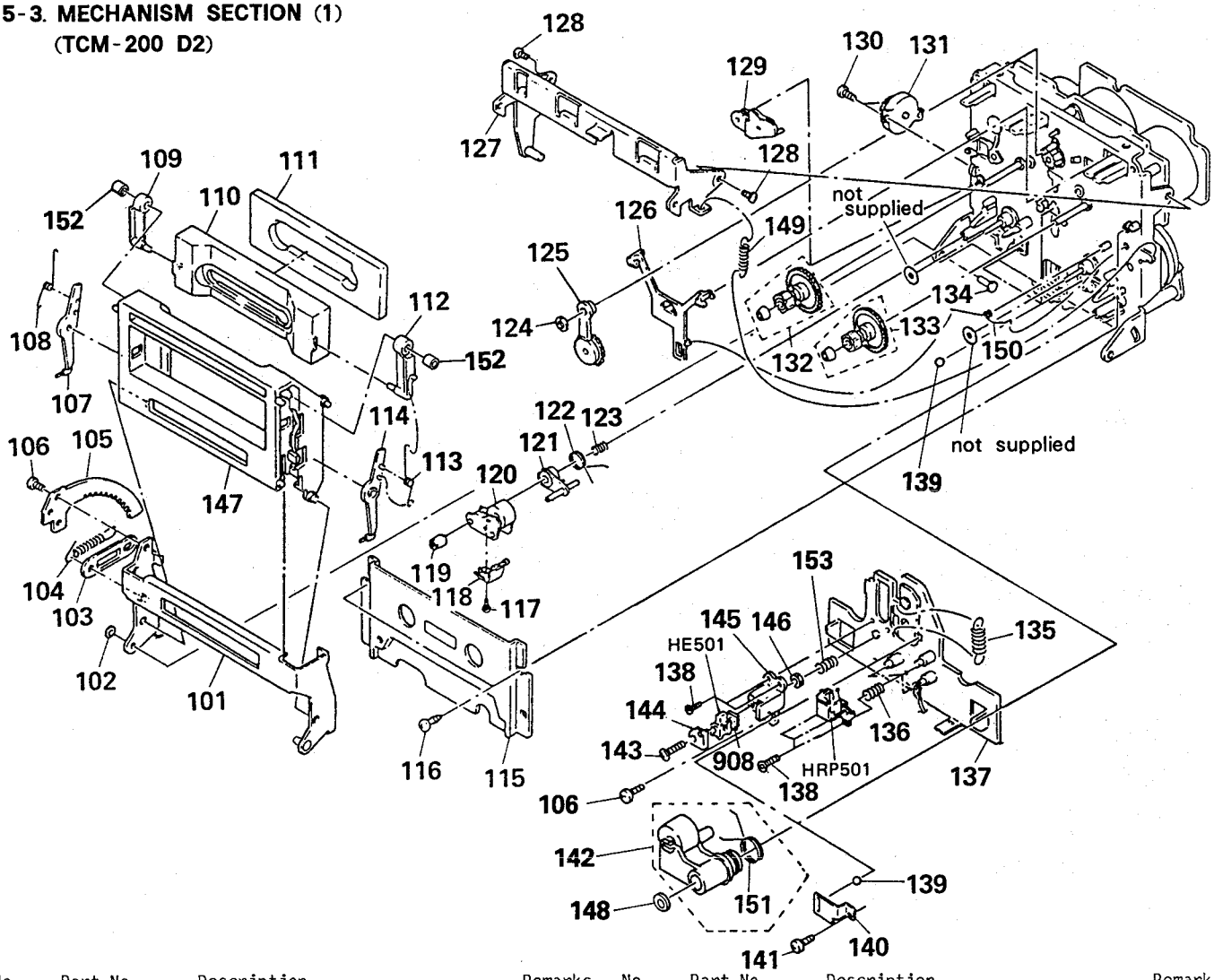
No.	Part No.	Description	Remarks
1	7-682-548-04	SCREW +BVTT 3X8 (S)	
2	X-3304-944-1	FOOT ASSY	
3	3-703-685-21	SCREW (+BV 3X8)	
4	7-682-547-09	SCREW +BVTT 3X6 (S)	
5	4-925-039-41	CASE	
6	3-704-366-01	SCREW (CASE)(M3X8)	
7	*4-912-962-01	(EXCEPT E)...COVER (1P), TERMINAL	
8	*3-703-244-00	(EXCEPT E)...BUSHING (2104), CORD	
	3-703-571-11	(E).....BUSHING (S)(4516), CORD	
9	3-831-441-XX	CUSHION (B), CABINET	
10	7-621-849-00	SCREW, TAPPING	
11	*3-350-460-11	(US,Canadian)...PANEL, BACK	
	*3-350-460-21	(UK).....PANEL, BACK	
	*3-350-460-31	(WG).....PANEL, BACK	
	*3-350-460-61	(K222ESG).....PANEL, BACK	
	*3-350-460-71	(K850ES:E).....PANEL, BACK	
12	*3-657-780-00	(EXCEPT US)...CUSHION	
13	7-682-547-04	SCREW +BVTT 3X6 (S)	
14	7-682-548-09	SCREW +BVTT 3X8 (S)	
15	4-902-345-01	HEAT SINK	
16	7-682-147-15	SCREW, TR	
17	4-870-539-00	PLATE, GROUND	
18	3-350-459-01	ABSORBENT (S), VIBRATION	
19	X-3304-972-1	(WG,K850ES:E)...PANEL (R) ASSY, SIDE	
20	4-933-446-01	(WG,K850ES:E)...SCREW (SIDE PANEL)	
21	3-701-947-12	(WG,UK)...LABEL (T1.25A), FUSE	
22	7-685-133-19	(E)....SCREW +BTP 2.6X6 TYPE2 N-S	
23	3-356-961-01	(E)....COVER (TRANSFORMER)	
24	3-703-044-26	(US,Canadian)...LABEL,CAUTION	
25	*4-352-844-01	PIN, LEAD, COATING	
26	X-3304-971-1	(WG,K850ES:E)...PANEL (L) ASSY, SIDE	
901	*A-2006-174-A	(WG,UK,E).....MOUNTED PCB, MAIN	
	*A-2006-276-A	(US,Canadian)...MOUNTED PCB, MAIN	
903	1-533-213-31	HOLDER, FUSE	
905	⚠1-526-565-00	(E)...AC PLUG ADAPTOR	
CNP701	⚠1-551-188-XX	(E).....CORD, POWER	
CNP701	⚠1-555-465-00	(US,Canadian)...CORD, POWER	
CNP701	⚠1-555-795-00	(WG).....CORD, POWER	
CNP701	⚠1-556-035-00	(UK).....CORD, POWER	
F701	⚠1-532-285-00	(WG,UK,E)....FUSE, TIME-LAG (1.250A)	
F701	⚠1-532-741-11	(US,Canadian)....FUSE, GLASS TUBE(1.25A)	
T701	⚠1-449-985-11	(US,Canadian)...TRANSFORMER, POWER	
T701	⚠1-449-986-11	(WG,UK).....TRANSFORMER, POWER	
T701	⚠1-450-065-11	(E).....TRANSFORMER, POWER	
VS701	⚠1-570-307-11	(E)....SWITCH, VOLTAGE CHANGE	

5-2. PANEL SECTION



No.	Part No.	Description	Remarks
51	3-356-907-01	(K222ESG)...PLATE (C), ORNAMENTAL	
	3-356-907-11	(K850ES)....PLATE (C), ORNAMENTAL	
52	3-356-902-01	WINDOW (C)	
53	3-350-495-01	KNOB (VOL)	
54	3-356-935-01	SPRING	
55	4-908-848-01	EMBLEM, SONY	
56	7-682-547-04	SCREW +BVTT 3X6 (S)	
57	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
58	3-354-912-01	KNOB, POWER (POWER)	
59	3-307-538-21	KNOB, SWITCH, TIMER (TIMER)	
60	X-3304-963-1	BUTTON ASSY	
61	3-350-496-01	BUTTON	
62	3-356-915-01	PANEL (BASE)	
63	3-356-909-01	(E).....WINDOW (METER)	
	3-356-909-11	(EXCEPT E)....WINDOW (METER)	
64	3-356-914-11	(US,Canadian)...PANEL, FRONT	
	3-356-914-21	(WG,K850ES:E)...PANEL, FRONT	
	3-356-914-31	(UK).....PANEL, FRONT	
	3-356-914-51	(K222ESG).....PANEL, FRONT	
65	X-3304-961-1	KNOB (VOL) ASSY	
66	3-356-908-01	LID, CASSETTE	
67	3-704-208-01	BAND, BINDING	
68	*3-356-924-01	HOLDER (FL)	
69	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
70	3-701-748-00	CLAMP	
71	9-911-840-XX	CUSHION	
902	*A-2006-175-A	MOUNTED PCB, PANEL	

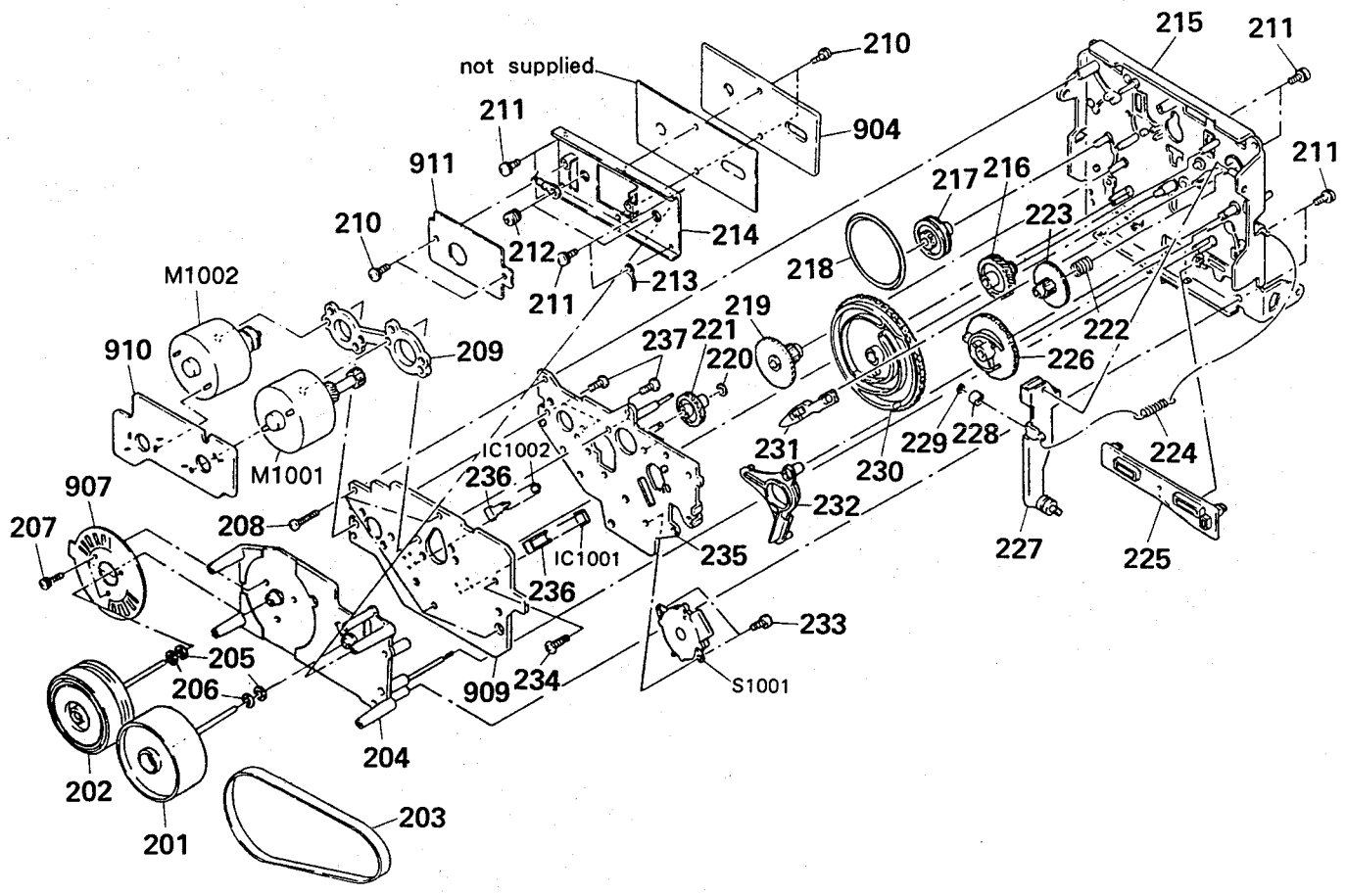
5-3. MECHANISM SECTION (1)
(TCM-200 D2)



No.	Part No.	Description	Remarks
101	X-3356-612-1	HOLDER (B) ASSY, CASSETTE	
102	3-558-708-21	WASHER, STOPPER	
103	*3-356-717-01	LEVER (JOINT)	
104	3-356-626-01	SPRING, TENSION	
105	3-356-708-01	GEAR (SOFT EJECT)	
106	7-621-775-10	SCREW +B 2.6X4	
107	3-356-932-01	LEVER (LA)	
108	3-356-927-01	SPRING (LEFT), TORSION	
109	3-356-933-01	LEVER (LB)	
110	3-356-928-01	PLATE (A), ORNAMENTAL	
111	*3-356-929-01	ABSORBENT, VIBRATION	
112	3-356-931-01	LEVER (RB)	
113	3-356-926-01	SPRING (RIGHT), TORSION	
114	3-356-930-01	LEVER (RA)	
115	X-3356-613-1	PLATE ASSY, ORNAMENTAL	
116	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
117	7-628-253-00	SCREW +PS 2X4	
118	3-564-138-00	GUIDE (S), TAPE	
119	3-356-652-01	NUT (PINCH LEVER S)	
120	X-3356-621-1	LEVER (PINCH LEVER S) ASSY	
121	3-356-660-01	LEVER (PS)	
122	3-356-661-01	SPRING (PINCH LEVER S), TORSION	
123	3-356-657-01	SPRING (PS), COMPRESSION	
124	3-669-465-00	WASHER (1.5), STOPPER	
125	X-3356-641-1	LEVER (FR2) ASSY	
126	3-356-614-01	SLIDER (BRAKE)	
127	*X-3356-608-1	LEVER (LIFTER) ASSY	
128	3-356-601-11	SCREW, STEP	
129	X-3356-623-1	LEVER (BT) ASSY	

No.	Part No.	Description	Remarks
130	7-685-851-09	SCREW +BVTT 2X4 (S)	
131	3-712-786-41	DAMPER, OIL	
132	X-3356-629-1	GEAR (S) ASSY	
133	X-3356-627-1	GEAR (T) ASSY	
134	3-356-710-01	SHAFT (LEFT) (CASSETTE HOLDER)	
135	3-356-658-01	SPRING (LIMITER H), TENSION	
136	3-356-659-01	SPRING (RPH), COMPRESSION	
137	*X-3356-617-1	SLIDER (HEAD PC BOADR) ASSY	
138	7-621-255-20	SCREW +P 2X4	
139	7-671-154-01	STAINLESS BALL	
140	3-356-656-01	SPRING (HEAD PC BOARD), LEAF	
141	7-685-870-01	SCREW +BVTT 3X5 (S)	
142	X-3356-620-1	LEVER (PINCH LEVER T) ASSY	
143	7-621-772-70	SCREW +B 2X14	
144	3-318-433-01	SPRING	
145	*3-576-977-00	BRACKET, E. HEAD	
146	7-622-205-05	NUT M2 TYPE2	
147	X-3356-611-1	HOLDER (A) ASSY, CASSETTE	
148	3-669-596-00	WASHER (2.3), STOPPER	
149	3-356-624-01	SPRING, TENSION	
150	3-356-619-01	SPRING (B), TORSION	
151	3-356-672-01	SPRING (PINCH LEVER T), TORSION	
152	3-356-946-01	BUSHING	
153	3-564-121-00	SPRING, COMPRESSION	
908	*1-608-268-00	PC BOARD, ERASE HEAD	
HE501	1-543-358-11	HEAD, MAGNETIC (ERASE)	
HRP501	1-543-679-11	HEAD, MAGNETIC (REC/PB)	

5-4. MECHANISM SECTION (2)
(TCM-200 D2)



No.	Part No.	Description	Remarks
201	X-3356-626-1	FLYWHEEL (S) ASSY	
202	X-3356-619-1	FLYWHEEL (DT) ASSY	
203	3-564-088-00	BELT (2), CAPSTAN	
204	*X-3356-614-1	DECK (D1) ASSY	
205	3-356-705-31	WASHER (CAPSTAN)	
206	3-356-705-21	WASHER (CAPSTAN)	
207	7-628-254-10	SCREW +PS 2.6X6	
208	3-355-801-01	SCREW (BTP 2X18)	
209	*3-356-628-01	SPACER (MOTOR)	
210	7-685-870-01	SCREW +BVTT 3X5 (S)	
211	7-682-648-09	SCREW +PS 3X8	
212	3-489-073-00	SCREW, THRUST	
213	*3-701-822-00	HOLDER, WIRE	
214	*X-3356-615-1	BRACKET(THRUST RETAINER D)ASSY	
215	X-3356-622-1	CHASSIS (C) ASSY, MECHANICAL	
216	3-356-703-01	GEAR (COMMUNICATION C)	
217	3-356-607-01	PULLEY (MODE)	
218	3-356-603-01	BELT (MODE)	
219	3-356-606-01	GEAR (MODE)	
220	3-669-465-00	WASHER (1.5), STOPPER	
221	3-356-702-01	GEAR (COMMUNICATION B)	
222	3-356-605-01	SPRING, COMPRESSION	
223	3-356-609-01	GEAR (LOADING)	

No.	Part No.	Description	Remarks
224	3-356-625-01	SPRING, TENSION	
225	3-356-653-01	SLIDER (PAUSE)	
226	3-356-616-01	GEAR (LOADING CAM)	
227	*X-3356-606-1	LEVER (LOADING) ASSY	
228	3-356-630-01	ROLLER (LOADING)	
229	3-558-708-11	WASHER, STOPPER	
230	3-356-654-01	GEAR (MODE CAM C)	
231	3-356-617-01	LEVER (SELECTION)	
232	3-356-613-01	LEVER (MODE)	
233	7-621-772-20	SCREW +B 2X5	
234	3-356-707-01	SCREW (+PTPWH 2X25)	
235	*X-3356-616-1	BRACKET (MOTOR D) ASSY	
236	3-356-631-01	HOLDER (SENSOR)	
237	7-621-773-95	SCREW +B 2.6X6	
904	A-2006-154-A	MOUNTED PCB, CAPSTAN C.O.C	
907	1-632-779-11	PC BOARD, FG	
909	*1-632-740-11	PC BOARD, MD	
910	*1-632-741-11	PC BOARD, REAL MOTOR	
911	*1-632-746-11	PC BOARD, COMPARATOR	
M1001	X-3356-638-1	MOTOR (REEL R) ASSY	
M1002	X-3356-604-1	MOTOR (ASSIST) ASSY	
S1001	1-466-238-11	ENCODER, ROTARY	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

Abbrebiation :
CND : Canadian
WG : West Germany

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
901	*A-2006-174-A	(WG,UK,E).....MOUNTED PCB, MAIN			
	*A-2006-276-A	(US,Canadian)...MOUNTED PCB, MAIN			
902	*A-2006-175-A	MOUNTED PCB, PANEL			
903	1-533-213-31	HOLDER, FUSE			
904	A-2006-154-A	MOUNTED PCB, CAPSTAN C.O.C			
905	⚠1-526-565-00	(E)...AC PLUG ADAPTOR			
907	1-632-779-11	PC BOARD, FG			
908	*1-608-268-00	PC BOARD, ERASE HEAD			
909	*1-632-740-11	PC BOARD, MD			
910	*1-632-741-11	PC BOARD, REAL MOTOR			
911	*1-632-746-11	PC BOARD, COMPARATOR			
C101	1-130-973-00	FILM	0.022MF	5%	100V
C102	1-124-657-00	ELECT	10MF	20%	50V
C103	1-136-158-00	FILM	0.027MF	5%	50V
C104	1-107-159-00	MICA	33PF	5%	500V
C105	1-130-474-00	MYLAR	0.0018MF	5%	50V
C106	1-130-474-00	MYLAR	0.0018MF	5%	50V
C107	1-130-475-00	MYLAR	0.0022MF	5%	50V
C108	1-130-475-00	MYLAR	0.0022MF	5%	50V
C109	1-130-478-00	MYLAR	0.0039MF	5%	50V
C110	1-136-173-00	FILM	0.47MF	5%	50V
C111	1-136-167-00	FILM	0.15MF	5%	50V
C112	1-136-155-00	FILM	0.015MF	5%	50V
C113	1-124-791-11	ELECT	1MF	20%	50V
C114	1-136-169-00	FILM	0.22MF	5%	50V
C115	1-136-163-00	FILM	0.068MF	5%	50V
C116	1-136-162-00	FILM	0.056MF	5%	50V
C117	1-124-791-11	ELECT	1MF	20%	50V
C118	1-130-480-00	MYLAR	0.0056MF	5%	50V
C119	1-136-153-00	FILM	0.01MF	5%	50V
C120	1-124-657-00	ELECT	10MF	20%	50V
C131	1-123-382-00	ELECT	3.3MF	20%	50V
C141	1-126-059-11	ELECT	10MF	20%	50V
C151	1-123-369-00	ELECT	4.7MF	20%	50V
C152	1-123-369-00	ELECT	4.7MF	20%	50V
C153	1-126-059-11	ELECT	10MF	20%	50V
C154	1-130-475-00	MYLAR	0.0022MF	5%	50V
C155	1-130-475-00	MYLAR	0.0022MF	5%	50V
C156	1-130-478-00	MYLAR	0.0039MF	5%	50V
C157	1-136-173-00	FILM	0.47MF	5%	50V
C158	1-136-167-00	FILM	0.15MF	5%	50V
C159	1-136-155-00	FILM	0.015MF	5%	50V
C160	1-124-791-11	ELECT	1MF	20%	50V
C161	1-136-169-00	FILM	0.22MF	5%	50V

Ref.No.	Part No.	Description			
C162	1-136-163-00	FILM	0.068MF	5%	50V
C163	1-136-162-00	FILM	0.056MF	5%	50V
C164	1-124-791-11	ELECT	1MF	20%	50V
C165	1-130-480-00	MYLAR	0.0056MF	5%	50V
C166	1-136-153-00	FILM	0.01MF	5%	50V
C167	1-126-059-11	ELECT	10MF	20%	50V
C168	1-130-474-00	MYLAR	0.0018MF	5%	50V
C169	1-126-059-11	ELECT	10MF	20%	50V
C170	1-136-163-00	FILM	0.068MF	5%	50V
C171	1-126-059-11	ELECT	10MF	20%	50V
C172	1-136-156-00	FILM	0.018MF	5%	50V
C173	1-136-157-00	FILM	0.022MF	5%	50V
C174	1-136-156-00	FILM	0.018MF	5%	50V
C175	1-136-157-00	FILM	0.022MF	5%	50V
C176	1-136-155-00	FILM	0.015MF	5%	50V
C178	1-109-619-00	MICA	180PF	5%	500V
C179	1-107-210-00	MICA	22PF	5%	500V
C180	1-123-369-00	ELECT	4.7MF	20%	50V
C191	1-136-803-11	FILM	560PF	5%	630V
C192	1-107-169-00	MICA	100PF	5%	500V
C193	1-130-468-00	MYLAR	560PF	5%	50V
C194	1-136-165-00	FILM	0.1MF	5%	50V
C195	1-136-165-00	FILM	0.1MF	5%	50V
C196	1-136-157-00	FILM	0.022MF	5%	50V
C201	1-130-973-00	FILM	0.022MF	5%	100V
C202	1-124-657-00	ELECT	10MF	20%	50V
C203	1-136-158-00	FILM	0.027MF	5%	50V
C204	1-107-159-00	MICA	33PF	5%	500V
C205	1-130-474-00	MYLAR	0.0018MF	5%	50V
C206	1-130-474-00	MYLAR	0.0018MF	5%	50V
C207	1-130-475-00	MYLAR	0.0022MF	5%	50V
C208	1-130-475-00	MYLAR	0.0022MF	5%	50V
C209	1-130-478-00	MYLAR	0.0039MF	5%	50V
C210	1-136-173-00	FILM	0.47MF	5%	50V
C211	1-136-167-00	FILM	0.15MF	5%	50V
C212	1-136-155-00	FILM	0.015MF	5%	50V
C213	1-124-791-11	ELECT	1MF	20%	50V
C214	1-136-169-00	FILM	0.22MF	5%	50V
C215	1-136-163-00	FILM	0.068MF	5%	50V
C216	1-136-162-00	FILM	0.056MF	5%	50V
C217	1-124-791-11	ELECT	1MF	20%	50V
C218	1-130-480-00	MYLAR	0.0056MF	5%	50V
C219	1-136-153-00	FILM	0.01MF	5%	50V
C220	1-124-657-00	ELECT	10MF	20%	50V
C231	1-123-382-00	ELECT	3.3MF	20%	50V

Ref.No.	Part No.	Description			
C241	1-126-059-11	ELECT	10MF	20%	50V
C251	1-123-369-00	ELECT	4.7MF	20%	50V
C252	1-123-369-00	ELECT	4.7MF	20%	50V
C253	1-126-059-11	ELECT	10MF	20%	50V
C254	1-130-475-00	MYLAR	0.0022MF	5%	50V
C255	1-130-475-00	MYLAR	0.0022MF	5%	50V
C256	1-130-478-00	MYLAR	0.0039MF	5%	50V
C257	1-136-173-00	FILM	0.47MF	5%	50V
C258	1-136-167-00	FILM	0.15MF	5%	50V
C259	1-136-155-00	FILM	0.015MF	5%	50V
C260	1-124-791-11	ELECT	1MF	20%	50V
C261	1-136-169-00	FILM	0.22MF	5%	50V
C262	1-136-163-00	FILM	0.068MF	5%	50V
C263	1-136-162-00	FILM	0.056MF	5%	50V
C264	1-124-791-11	ELECT	1MF	20%	50V
C265	1-130-480-00	MYLAR	0.0056MF	5%	50V
C266	1-136-153-00	FILM	0.01MF	5%	50V
C267	1-126-059-11	ELECT	10MF	20%	50V
C268	1-130-474-00	MYLAR	0.0018MF	5%	50V
C269	1-126-059-11	ELECT	10MF	20%	50V
C270	1-136-163-00	FILM	0.068MF	5%	50V
C271	1-126-059-11	ELECT	10MF	20%	50V
C272	1-136-156-00	FILM	0.018MF	5%	50V
C273	1-136-157-00	FILM	0.022MF	5%	50V
C274	1-136-156-00	FILM	0.018MF	5%	50V
C275	1-136-157-00	FILM	0.022MF	5%	50V
C276	1-136-155-00	FILM	0.015MF	5%	50V
C278	1-109-619-00	MICA	180PF	5%	500V
C279	1-107-210-00	MICA	22PF	5%	500V
C280	1-123-369-00	ELECT	4.7MF	20%	50V
C291	1-136-803-11	FILM	560PF	5%	630V
C292	1-107-169-00	MICA	100PF	5%	500V
C293	1-130-468-00	MYLAR	560PF	5%	50V
C294	1-136-165-00	FILM	0.1MF	5%	50V
C295	1-136-165-00	FILM	0.1MF	5%	50V
C296	1-136-157-00	FILM	0.022MF	5%	50V
C503	1-136-165-00	FILM	0.1MF	5%	50V
C504	1-124-925-11	ELECT	2.2MF	20%	50V
C505	1-124-925-11	ELECT	2.2MF	20%	50V
C506	1-130-475-00	MYLAR	0.0022MF	5%	50V
C507	1-124-902-00	ELECT	0.47MF	20%	50V
C521	1-123-875-11	ELECT	10MF	20%	50V
C522	1-126-233-11	ELECT	22MF	20%	25V
C541	1-126-059-11	ELECT	10MF	20%	50V
C542	1-126-059-11	ELECT	10MF	20%	50V
C550	1-136-157-00	(US,Canadian)...FILM	0.022MF	5%	50V
C551	1-124-915-11	ELECT	10MF	20%	63V
C552	1-124-915-11	ELECT	10MF	20%	63V
C553	1-124-925-11	ELECT	2.2MF	20%	50V
C561	1-136-559-11	FILM	0.0047MF	5%	630V
C562	1-107-045-00	MICA	3.9PF	0.5PF	500V
C563	1-123-875-11	ELECT	10MF	20%	50V
C564	1-136-233-11	FILM	0.0047MF	5%	100V
C565	1-136-228-11	FILM	0.0012MF	5%	100V
C566	1-136-228-11	FILM	0.0012MF	5%	100V
C567	1-124-477-11	ELECT	47MF	20%	16V
C568	1-124-915-11	ELECT	10MF	20%	63V

Ref.No.	Part No.	Description			
C569	1-124-902-00	ELECT	0.47MF	20%	50V
C570	1-130-474-00	MYLAR	0.0018MF	5%	50V
C571	1-130-474-00	MYLAR	0.0018MF	5%	50V
C572	1-136-157-00	FILM	0.022MF	5%	50V
C573	1-136-157-00	FILM	0.022MF	5%	50V
C574	1-124-902-00	ELECT	0.47MF	20%	50V
C601	1-136-161-00	FILM	0.047MF	5%	50V
C602	1-136-177-00	FILM	1MF	5%	50V
C603	1-124-636-00	ELECT	3300MF	20%	25V
C604	1-124-636-00	ELECT	3300MF	20%	25V
C605	1-126-101-11	ELECT	100MF	20%	10V
C606	1-124-602-00	ELECT	2200MF	20%	35V
C607	1-124-602-00	ELECT	2200MF	20%	35V
C608	1-124-791-11	ELECT	1MF	20%	50V
C609	1-123-875-11	ELECT	10MF	20%	50V
C701	1-124-910-11	ELECT	47MF	20%	50V
C702	1-124-122-11	ELECT	100MF	20%	50V
C703	1-126-105-11	ELECT	1000MF	20%	35V
C704	1-124-927-11	ELECT	4.7MF	20%	50V
C705	1-124-927-11	ELECT	4.7MF	20%	50V
C706	1-124-473-11	ELECT	1000MF	20%	10V
C707	1-124-927-11	ELECT	4.7MF	20%	50V
C708	1-124-556-11	ELECT	2200MF	20%	16V
C709	1-124-927-11	ELECT	4.7MF	20%	50V
C710	1-124-471-00	ELECT	1000MF	20%	6.3V
C711	1-136-165-00	FILM	0.1MF	5%	50V
C712	1-124-927-11	ELECT	4.7MF	20%	50V
C713	1-124-556-11	ELECT	2200MF	20%	16V
C714	1-124-618-11	ELECT	2200MF	20%	35V
C801	1-162-294-31	CERAMIC	0.001MF	10%	50V
C802	1-162-294-31	CERAMIC	0.001MF	10%	50V
C803	1-124-472-11	ELECT	470MF	20%	6.3V
C804	1-124-477-11	ELECT	47MF	20%	16V
C805	1-164-159-11	CERAMIC	0.1MF		50V
C806	1-164-159-11	CERAMIC	0.1MF		50V
C807	1-124-927-11	ELECT	4.7MF	20%	50V
C808	1-161-494-00	CERAMIC	0.022MF		25V
C809	1-124-443-00	ELECT	100MF	20%	10V
C810	1-123-875-11	ELECT	10MF	20%	50V
C901	1-161-379-00	CERAMIC	0.01MF	30%	16V
C902	1-126-177-11	ELECT	100MF	20%	6.3V
C903	1-162-294-31	CERAMIC	0.001MF	10%	50V
C905	1-124-779-00	ELECT CHIP	10MF	20%	16V
C906	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C907	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C908	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C909	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C911	1-124-779-00	ELECT CHIP	10MF	20%	16V
C910	1-163-205-00	CERAMIC CHIP	0.001MF	10%	50V
C952	1-124-282-00	ELECT(NONPOLAR)	22MF	20%	25V
C954	1-124-477-11	ELECT	47MF	20%	25V
C953	1-124-478-11	ELECT	100MF	20%	25V
C951	1-136-157-00	FILM	0.022MF	5%	50V
C957	1-136-159-00	FILM	0.033MF	5%	50V
C955	1-162-203-31	CERAMIC	15PF	5%	50V
C956	1-162-203-31	CERAMIC	15PF	5%	50V
C1051	1-123-875-11	ELECT	10MF	20%	50V

Ref.No.	Part No.	Description
C1052	1-123-875-11	ELECT 10MF 20% 50V
C1053	1-164-159-11	CERAMIC 0.1MF 50V
CN501	*1-560-062-00	PIN, CONNECTOR 4P
CN502	*1-564-508-11	PLUG, CONNECTOR 5P
CN521	*1-564-666-11	PIN, CONNECTOR 10P
CN522	*1-564-337-00	PIN, CONNECTOR 3P
CN523	*1-564-338-00	PIN, CONNECTOR 4P
CN551	*1-564-507-11	PLUG, CONNECTOR 4P
CN552	*1-564-507-11	PLUG, CONNECTOR 4P
CN553	*1-564-507-11	PLUG, CONNECTOR 4P
CN554	*1-564-509-11	PLUG, CONNECTOR 6P
CN555	*1-560-062-00	PIN, CONNECTOR 4P
CN561	*1-560-061-00	PIN, CONNECTOR 3P
CN562	*1-564-506-11	PLUG, CONNECTOR 3P
CN563	*1-564-666-11	PIN, CONNECTOR 10P
CN564	*1-564-506-11	PLUG, CONNECTOR 3P
CN565	*1-564-505-11	PLUG, CONNECTOR 2P
CN570	*1-564-520-11	PLUG, CONNECTOR 5P
CN571	*1-564-519-11	PLUG, CONNECTOR 4P
CN572	*1-564-519-11	PLUG, CONNECTOR 4P
CN573	*1-564-519-11	PLUG, CONNECTOR 4P
CN574	*1-564-521-11	PLUG, CONNECTOR 6P
CN601	*1-560-061-00	PIN, CONNECTOR 3P
CN701	*1-564-511-11	PLUG, CONNECTOR 8P
CN702	*1-564-339-00	PIN, CONNECTOR 5P
CN801	*1-564-506-11	PLUG, CONNECTOR 3P
CN802	*1-564-505-11	PLUG, CONNECTOR 2P
CN803	*1-564-337-00	PIN, CONNECTOR 3P
CN804	*1-506-503-11	PIN, CONNECTOR 9P
CN805	*1-564-666-11	PIN, CONNECTOR 10P
CN806	*1-564-666-11	PIN, CONNECTOR 10P
CN951	*1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P
CN952	*1-564-518-11	PLUG, CONNECTOR 3P
CN1001	1-506-615-11	PIN, CONNECTOR 9P
CN1002	1-564-501-11	PIN, CONNECTOR 8P
CN1051	*1-564-499-11	PIN, CONNECTOR 6P
CN1052	*1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P
CN1053	*1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNP701⚠	1-551-188-XX	(E).....CORD, POWER
CNP701⚠	1-555-465-00	(US,Canadian)...CORD, POWER
CNP701⚠	1-555-795-00	(WG).....CORD, POWER
CNP701⚠	1-556-035-00	(UK).....CORD, POWER
D131	8-719-107-94	DIODE 1SS202-1
D141	8-719-107-94	DIODE 1SS202-1
D231	8-719-107-94	DIODE 1SS202-1
D241	8-719-107-94	DIODE 1SS202-1
D501	8-719-107-94	DIODE 1SS202-1
D502	8-719-107-94	DIODE 1SS202-1
D521	8-719-107-94	DIODE 1SS202-1
D522	8-719-107-94	DIODE 1SS202-1
D523	8-719-107-94	DIODE 1SS202-1
D524	8-719-107-94	DIODE 1SS202-1
D525	8-719-107-94	DIODE 1SS202-1
D526	8-719-107-94	DIODE 1SS202-1

Ref.No.	Part No.	Description
D561	8-719-107-94	DIODE 1SS202-1
D562	8-719-107-94	DIODE 1SS202-1
D563	8-719-107-94	DIODE 1SS202-1
D564	8-719-107-94	DIODE 1SS202-1
D565	8-719-107-94	DIODE 1SS202-1
D566	8-719-107-94	DIODE 1SS202-1
D601	8-719-230-02	DIODE 30DF2
D602	8-719-230-02	DIODE 30DF2
D603	8-719-230-02	DIODE 30DF2
D604	8-719-230-02	DIODE 30DF2
D605	8-719-933-41	DIODE HZS6C3L
D606	8-719-107-94	DIODE 1SS202-1
D607	8-719-107-94	DIODE 1SS202-1
D701	8-719-200-77	DIODE 10E2N
D702	8-719-200-77	DIODE 10E2N
D703	8-719-200-77	DIODE 10E2N
D704	8-719-200-77	DIODE 10E2N
D705	8-719-200-77	DIODE 10E2N
D706	8-719-200-77	DIODE 10E2N
D707	8-719-933-41	DIODE HZS6C3L
D708	8-719-107-94	DIODE 1SS202-1
D709	8-719-200-77	DIODE 10E2N
D710	8-719-933-41	DIODE HZS6C3L
D711	8-719-015-02	DIODE UZP-8.2BB
D712	8-719-107-94	DIODE 1SS202-1
D713	8-719-107-94	DIODE 1SS202-1
D714	8-719-107-94	DIODE 1SS202-1
D715	8-719-001-79	DIODE UZL-12H1
D716	8-719-107-94	DIODE 1SS202-1
D717	8-719-200-77	DIODE 10E2N
D801	8-719-107-94	DIODE 1SS202-1
D802	8-719-200-77	DIODE 10E2N
D803	8-719-107-94	DIODE 1SS202-1
D804	8-719-107-94	DIODE 1SS202-1
D805	8-719-107-94	DIODE 1SS202-1
D806	8-719-107-94	DIODE 1SS202-1
D901	8-719-107-94	DIODE 1SS202-1
D902	8-719-107-94	DIODE 1SS202-1
D903	8-719-302-46	LED SEL1210S-C
D904	8-719-302-79	LED SEL1910A-C
D905	8-719-302-45	LED SEL1210S
D906	8-719-107-94	DIODE 1SS202-1
D907	8-719-107-94	DIODE 1SS202-1
D908	8-719-107-94	DIODE 1SS202-1
D909	8-719-107-94	DIODE 1SS202-1
D910	8-719-107-94	DIODE 1SS202-1
D911	8-719-107-94	DIODE 1SS202-1
D912	8-719-107-94	DIODE 1SS202-1
D913	8-719-107-94	DIODE 1SS202-1
D914	8-719-107-94	DIODE 1SS202-1
D915	8-719-107-94	DIODE 1SS202-1
F701	⚠1-532-285-00	(WG,UK,E)....FUSE, TIME-LAG (1.250A)
F701	⚠1-532-741-11	(US,Canadian)....FUSE, GLASS TUBE (1.25A)
FLT901	1-519-560-11	INDICATOR TUBE, FLUORESCENT

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
H901	8-719-403-79	HOLE ELEMENT OH009
H902	8-719-403-79	HOLE ELEMENT OH009
H903	8-719-403-79	HOLE ELEMENT OH009
HE501	1-543-358-11	HEAD, MAGNETIC (ERASE)
HRP501	1-543-679-11	HEAD, MAGNETIC (REC/PB)
IC501	8-759-602-01	IC M5220P
IC502	8-752-018-80	IC CX20188
IC503	8-759-945-58	IC RC4558P
IC504	8-759-208-14	IC TC4066BPHB
IC505	8-759-945-58	IC RC4558P
IC541	8-759-601-02	IC M5218P
IC551	8-759-710-59	IC NJM4580D-D
IC552	8-752-018-80	IC CX20188
IC553	8-759-710-59	IC NJM4580D-D
IC561	8-759-106-56	IC UPC1297CA
IC562	8-759-945-58	IC RC4558P
IC801	8-759-240-69	IC TC4069UBP
IC802	8-759-140-11	IC UPD4011BC
IC803	8-759-973-95	IC BA6219B
IC804	8-759-822-09	IC LB1641
IC805	8-759-634-78	IC M50964-222SP
IC901	8-759-302-98	IC HD614042SA87
IC902A	8-759-240-69	IC TC4069UBP
IC902B	8-752-017-40	IC CX20174
IC903	8-759-984-97	IC LM2903P
IC904	8-749-920-83	IC GP1U52XB
IC951	8-759-995-08	IC MC4558
IC952	8-759-201-58	IC TC9142P
IC1001	8-749-920-97	PHOTO REFLECTOR GP2S22B
IC1002	8-749-920-97	PHOTO REFLECTOR GP2S22B
J541	1-507-796-71	JACK (HEADPHONES)
J551	1-565-320-61	JACK, PIN 6P (LINE/CD DIRECT)
JR901	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR902	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR903	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR904	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR905	1-216-296-00	METAL GLAZE 0 5% 1/8W
L101	1-408-927-11	INDUCTOR 18MMH
L151	1-408-916-11	INDUCTOR 2.2MMH
L152	1-408-918-11	INDUCTOR 3.3MMH
L153	1-408-921-11	INDUCTOR 5.6MMH
L154	1-408-929-00	INDUCTOR 27MMH
L155	1-410-767-11	INDUCTOR 2.2MMH
L201	1-408-927-11	INDUCTOR 18MMH
L251	1-408-916-11	INDUCTOR 2.2MMH
L252	1-408-918-11	INDUCTOR 3.3MMH
L253	1-408-921-11	INDUCTOR 5.6MMH
L254	1-408-929-00	INDUCTOR 27MMH
L255	1-410-767-11	INDUCTOR 2.2MMH
LPF151	1-236-087-11	FILTER, LOW PASS
LPF251	1-236-087-11	FILTER, LOW PASS
M1001	X-3356-638-1	MOTOR (REEL R) ASSY
M1002	X-3356-604-1	MOTOR (ASSIST) ASSY
PL561	1-518-471-31	LAMP, PILOT
PL562	1-518-471-31	LAMP, PILOT

Ref.No.	Part No.	Description
Q101	8-729-922-37	TRANSISTOR 2SD2144S
Q102	8-729-922-37	TRANSISTOR 2SD2144S
Q131	8-729-922-37	TRANSISTOR 2SD2144S
Q132	8-729-922-37	TRANSISTOR 2SD2144S
Q151	8-729-141-30	TRANSISTOR 2SC3623A-LK
Q152	8-729-922-37	TRANSISTOR 2SD2144S
Q153	8-729-922-37	TRANSISTOR 2SD2144S
Q154	8-729-922-37	TRANSISTOR 2SD2144S
Q155	8-729-922-37	TRANSISTOR 2SD2144S
Q156	8-729-900-80	TRANSISTOR DTC114ES
Q201	8-729-922-37	TRANSISTOR 2SD2144S
Q202	8-729-922-37	TRANSISTOR 2SD2144S
Q231	8-729-922-37	TRANSISTOR 2SD2144S
Q232	8-729-922-37	TRANSISTOR 2SD2144S
Q251	8-729-141-30	TRANSISTOR 2SC3623A-LK
Q252	8-729-922-37	TRANSISTOR 2SD2144S
Q253	8-729-922-37	TRANSISTOR 2SD2144S
Q254	8-729-922-37	TRANSISTOR 2SD2144S
Q255	8-729-922-37	TRANSISTOR 2SD2144S
Q256	8-729-900-80	TRANSISTOR DTC114ES
Q501	8-729-922-37	TRANSISTOR 2SD2144S
Q502	8-729-900-80	TRANSISTOR DTC114ES
Q503	8-729-900-89	TRANSISTOR DTC144ES
Q504	8-729-821-04	TRANSISTOR 2SA1317-STU
Q520	8-729-900-61	TRANSISTOR DTA114ES
Q521	8-729-900-61	TRANSISTOR DTA114ES
Q522	8-729-900-61	TRANSISTOR DTA114ES
Q523	8-729-900-80	TRANSISTOR DTC114ES
Q524	8-729-900-80	TRANSISTOR DTC114ES
Q525	8-729-900-61	TRANSISTOR DTA114ES
Q526	8-729-900-80	TRANSISTOR DTC114ES
Q551	8-729-900-61	TRANSISTOR DTA114ES
Q552	8-729-900-80	TRANSISTOR DTC114ES
Q561	8-729-194-57	TRANSISTOR 2SC945-P
Q562	8-729-194-57	TRANSISTOR 2SC945-P
Q563	8-729-821-04	TRANSISTOR 2SA1317-STU
Q564	8-729-900-80	TRANSISTOR DTC114ES
Q565	8-729-900-80	TRANSISTOR DTC114ES
Q566	8-729-900-80	TRANSISTOR DTC114ES
Q567	8-729-900-80	TRANSISTOR DTC114ES
Q568	8-729-900-89	TRANSISTOR DTC144ES
Q569	8-729-900-89	TRANSISTOR DTC144ES
Q570	8-729-281-52	TRANSISTOR 2SC1815-Y
Q571	8-729-900-65	TRANSISTOR DTA144ES
Q572	8-729-900-89	TRANSISTOR DTC144ES
Q601	8-729-107-53	TRANSISTOR 2SC2275A
Q602	8-729-922-37	TRANSISTOR 2SD2144S
Q603	8-729-224-62	TRANSISTOR 2SK246-GR
Q604	8-729-900-80	TRANSISTOR DTC114ES
Q605	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q606	8-729-821-04	TRANSISTOR 2SA1317-STU
Q607	8-729-224-62	TRANSISTOR 2SK246-GR
Q608	8-729-141-32	TRANSISTOR 2SA1409-LK
Q609	8-729-190-53	TRANSISTOR 2SA985
Q610	8-729-900-80	TRANSISTOR DTC114ES
Q611	8-729-900-61	TRANSISTOR 2SA1348-TP
Q701	8-729-141-32	TRANSISTOR 2SA1409-LK

Ref.No.	Part No.	Description
Q702	8-729-140-04	TRANSISTOR 2SB1116A-L
Q703	8-729-920-24	TRANSISTOR DTD114ES
Q704	8-729-922-37	TRANSISTOR 2SD2144S
Q705	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q706	8-729-920-98	TRANSISTOR 2SD1761-EF
Q707	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q708	8-729-920-98	TRANSISTOR 2SD1761-EF
Q709	8-729-920-98	TRANSISTOR 2SD1761-EF
Q710	8-729-922-37	TRANSISTOR 2SD2144S
Q801	8-729-900-61	TRANSISTOR DTA114ES
Q802	8-729-900-61	TRANSISTOR DTA114ES
Q803	8-729-900-61	TRANSISTOR DTA114ES
Q804	8-729-900-61	TRANSISTOR DTA114ES
Q805	8-729-900-61	TRANSISTOR DTA114ES
Q806	8-729-900-61	TRANSISTOR DTA114ES
Q807	8-729-900-61	TRANSISTOR DTA114ES
Q808	8-729-821-04	TRANSISTOR 2SA1317-STU
Q809	8-729-900-80	TRANSISTOR DTC114ES
Q810	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q811	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q812	8-729-900-61	TRANSISTOR DTA114ES
Q813	8-729-900-61	TRANSISTOR DTA114ES
Q814	8-729-900-61	TRANSISTOR DTA114ES
Q815	8-729-900-61	TRANSISTOR DTA114ES
Q816	8-729-821-04	TRANSISTOR 2SA1317-STU
Q901	8-729-900-61	TRANSISTOR DTA114ES
Q902	8-729-900-61	TRANSISTOR DTA114ES
Q903	8-729-900-61	TRANSISTOR DTA114ES
Q904	8-729-900-61	TRANSISTOR DTA114ES
Q905	8-729-920-26	TRANSISTOR DTB114ES
Q906	8-729-920-26	TRANSISTOR DTB114ES
Q907	8-729-900-80	TRANSISTOR DTC114ES
Q908	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q909	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q910	8-729-900-61	TRANSISTOR DTA114ES
Q911	8-729-900-61	TRANSISTOR DTA114ES
Q912	8-729-900-80	TRANSISTOR DTC114ES
Q913	8-729-900-80	TRANSISTOR DTC114ES
Q914	8-729-900-61	TRANSISTOR DTA114ES
Q915	8-729-900-61	TRANSISTOR DTA114ES
Q916	8-729-900-61	TRANSISTOR DTA114ES
Q917	8-729-900-61	TRANSISTOR DTA114ES
Q918	8-729-900-61	TRANSISTOR DTA114ES
Q919	8-729-900-80	TRANSISTOR DTC114ES
Q920	8-729-900-61	TRANSISTOR DTA114ES
Q921	8-729-900-80	TRANSISTOR DTC114ES
Q922	8-729-900-89	TRANSISTOR DTC144ES
Q923	8-729-900-89	TRANSISTOR DTC144ES
R001	1-247-752-11	CARBON 1K 5% 1/2W
R101	1-249-590-11	CARBON 39K 5% 1/4W
R102	1-247-702-11	CARBON 150 5% 1/4W
R103	1-249-603-11	CARBON 130K 5% 1/4W
R104	1-247-722-11	CARBON 5.6K 5% 1/4W
R105	1-247-716-11	CARBON 1.8K 5% 1/4W
R106	1-247-138-00	CARBON 2K 5% 1/4W
R108	1-249-429-11	CARBON 10K 5% 1/4W
R109	1-247-717-11	CARBON 2.2K 5% 1/4W

Ref.No.	Part No.	Description
R110	1-249-465-11	CARBON 47K 5% 1/4W
R111	1-247-710-11	CARBON 560 5% 1/4W
R112	1-247-725-11	CARBON 10K 5% 1/4W
R113	1-247-718-11	CARBON 2.7K 5% 1/4W
R114	1-247-148-00	CARBON 5.1K 5% 1/4W
R115	1-246-545-00	CARBON 1M 5% 1/4W
R116	1-247-710-11	CARBON 560 5% 1/4W
R117	1-249-462-11	CARBON 22K 5% 1/4W
R118	1-247-852-11	CARBON 7.5K 5% 1/4W
R119	1-249-415-11	CARBON 680 5% 1/4W
R120	1-247-854-11	CARBON 9.1K 5% 1/4W
R121	1-249-465-11	CARBON 47K 5% 1/4W
R122	1-249-465-11	CARBON 47K 5% 1/4W
R123	1-249-429-11	CARBON 10K 5% 1/4W
R124	1-249-421-11	CARBON 2.2K 5% 1/4W
R131	1-249-421-11	CARBON 2.2K 5% 1/4W
R132	1-247-717-11	CARBON 2.2K 5% 1/4W
R133	1-249-421-11	CARBON 2.2K 5% 1/4W
R134	1-215-454-00	METAL 24K 1% 1/6W
R135	1-249-462-11	CARBON 22K 5% 1/4W
R136	1-215-453-00	METAL 22K 1% 1/6W
R137	1-215-457-00	METAL 33K 1% 1/6W
R138	1-249-408-11	CARBON 180 5% 1/4W
R140	1-249-429-11	CARBON 10K 5% 1/4W
R141	1-259-452-11	CARBON 10K 5% 1/6W
R142	1-259-440-11	CARBON 3.3K 5% 1/6W
R143	1-259-460-11	CARBON 22K 5% 1/6W
R144	1-247-704-11	CARBON 220 5% 1/4W
R149	1-249-425-11	CARBON 4.7K 5% 1/4W
R150	1-247-713-11	CARBON 1K 5% 1/4W
R151	1-249-586-11	CARBON 27K 5% 1/4W
R152	1-249-461-11	CARBON 18K 5% 1/4W
R153	1-249-469-11	CARBON 100K 5% 1/4W
R154	1-259-448-11	CARBON 6.8K 5% 1/6W
R155	1-259-442-11	CARBON 3.9K 5% 1/6W
R156	1-259-440-11	CARBON 3.3K 5% 1/6W
R157	1-259-449-11	CARBON 7.5K 5% 1/6W
R158	1-249-462-11	CARBON 22K 5% 1/4W
R159	1-259-468-11	CARBON 47K 5% 1/6W
R161	1-249-543-11	CARBON 430 5% 1/4W
R162	1-247-725-11	CARBON 10K 5% 1/4W
R163	1-247-148-00	CARBON 5.1K 5% 1/4W
R164	1-247-718-11	CARBON 2.7K 5% 1/4W
R165	1-246-545-00	CARBON 1M 5% 1/4W
R166	1-247-710-11	CARBON 560 5% 1/4W
R167	1-249-462-11	CARBON 22K 5% 1/4W
R168	1-247-852-11	CARBON 7.5K 5% 1/4W
R169	1-247-854-11	CARBON 9.1K 5% 1/4W
R170	1-249-415-11	CARBON 680 5% 1/4W
R171	1-247-721-11	CARBON 4.7K 5% 1/4W
R172	1-247-719-11	CARBON 3.3K 5% 1/4W
R173	1-249-421-11	CARBON 2.2K 5% 1/4W
R174	1-247-723-11	CARBON 6.8K 5% 1/4W
R175	1-249-590-11	CARBON 39K 5% 1/4W
R176	1-249-429-11	CARBON 10K 5% 1/4W
R177	1-259-468-11	CARBON 47K 5% 1/6W
R178	1-259-470-11	CARBON 56K 5% 1/6W

Ref.No.	Part No.	Description			
R179	1-259-464-11	CARBON	33K	5%	1/6W
R180	1-247-721-11	CARBON	4.7K	5%	1/4W
R181	1-259-406-11	CARBON	120	5%	1/6W
R182	1-259-452-11	CARBON	10K	5%	1/6W
R183	1-259-442-11	CARBON	3.9K	5%	1/6W
R184	1-259-406-11	CARBON	120	5%	1/6W
R185	1-259-452-11	CARBON	10K	5%	1/6W
R186	1-259-444-11	CARBON	4.7K	5%	1/6W
R187	1-249-782-11	CARBON	150	5%	1/6W
R189	1-259-436-11	CARBON	2.2K	5%	1/6W
R190	1-249-429-11	CARBON	10K	5%	1/4W
R191	1-249-429-11	CARBON	10K	5%	1/4W
R192	1-249-429-11	CARBON	10K	5%	1/4W
R193	1-249-432-11	CARBON	18K	5%	1/4W
R194	1-249-393-11	CARBON	10	5%	1/4W
R195	1-249-435-11	CARBON	33K	5%	1/4W
R196	1-259-480-11	CARBON	150K	5%	1/6W
R197	1-249-465-11	CARBON	47K	5%	1/4W
R198	1-247-725-11	CARBON	10K	5%	1/4W
R201	1-249-590-11	CARBON	39K	5%	1/4W
R202	1-247-702-11	CARBON	150	5%	1/4W
R203	1-249-603-11	CARBON	130K	5%	1/4W
R204	1-247-722-11	CARBON	5.6K	5%	1/4W
R205	1-247-716-11	CARBON	1.8K	5%	1/4W
R206	1-247-138-00	CARBON	2K	5%	1/4W
R208	1-249-429-11	CARBON	10K	5%	1/4W
R209	1-247-717-11	CARBON	2.2K	5%	1/4W
R210	1-249-465-11	CARBON	47K	5%	1/4W
R211	1-247-710-11	CARBON	560	5%	1/4W
R212	1-247-725-11	CARBON	10K	5%	1/4W
R213	1-247-718-11	CARBON	2.7K	5%	1/4W
R214	1-247-148-00	CARBON	5.1K	5%	1/4W
R215	1-246-545-00	CARBON	1M	5%	1/4W
R216	1-247-710-11	CARBON	560	5%	1/4W
R217	1-249-462-11	CARBON	22K	5%	1/4W
R218	1-247-852-11	CARBON	7.5K	5%	1/4W
R219	1-249-415-11	CARBON	680	5%	1/4W
R220	1-247-854-11	CARBON	9.1K	5%	1/4W
R221	1-249-465-11	CARBON	47K	5%	1/4W
R222	1-249-465-11	CARBON	47K	5%	1/4W
R223	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-249-421-11	CARBON	2.2K	5%	1/4W
R231	1-249-421-11	CARBON	2.2K	5%	1/4W
R232	1-247-717-11	CARBON	2.2K	5%	1/4W
R233	1-249-421-11	CARBON	2.2K	5%	1/4W
R234	1-215-454-00	METAL	24K	1%	1/6W
R235	1-249-462-11	CARBON	22K	5%	1/4W
R236	1-215-453-00	METAL	22K	1%	1/6W
R237	1-215-457-00	METAL	33K	1%	1/6W
R238	1-249-408-11	CARBON	180	5%	1/4W
R240	1-249-429-11	CARBON	10K	5%	1/4W
R241	1-259-452-11	CARBON	10K	5%	1/6W
R242	1-259-440-11	CARBON	3.3K	5%	1/6W
R243	1-259-460-11	CARBON	22K	5%	1/6W
R244	1-247-704-11	CARBON	220	5%	1/4W
R249	1-249-425-11	CARBON	4.7K	5%	1/4W
R250	1-247-713-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R251	1-249-586-11	CARBON	27K	5%	1/4W
R252	1-249-461-11	CARBON	18K	5%	1/4W
R253	1-249-469-11	CARBON	100K	5%	1/4W
R254	1-259-448-11	CARBON	6.8K	5%	1/6W
R255	1-259-442-11	CARBON	3.9K	5%	1/6W
R256	1-259-440-11	CARBON	3.3K	5%	1/6W
R257	1-259-449-11	CARBON	7.5K	5%	1/6W
R258	1-249-462-11	CARBON	22K	5%	1/4W
R259	1-259-468-11	CARBON	47K	5%	1/6W
R261	1-249-543-11	CARBON	430	5%	1/4W
R262	1-247-725-11	CARBON	10K	5%	1/4W
R263	1-247-148-00	CARBON	5.1K	5%	1/4W
R264	1-247-718-11	CARBON	2.7K	5%	1/4W
R265	1-246-545-00	CARBON	1M	5%	1/4W
R266	1-247-710-11	CARBON	560	5%	1/4W
R267	1-249-462-11	CARBON	22K	5%	1/4W
R268	1-247-852-11	CARBON	7.5K	5%	1/4W
R269	1-247-854-11	CARBON	9.1K	5%	1/4W
R270	1-249-415-11	CARBON	680	5%	1/4W
R271	1-247-721-11	CARBON	4.7K	5%	1/4W
R272	1-247-719-11	CARBON	3.3K	5%	1/4W
R273	1-249-421-11	CARBON	2.2K	5%	1/4W
R274	1-247-723-11	CARBON	6.8K	5%	1/4W
R275	1-249-590-11	CARBON	39K	5%	1/4W
R276	1-249-429-11	CARBON	10K	5%	1/4W
R277	1-259-468-11	CARBON	47K	5%	1/6W
R278	1-259-470-11	CARBON	56K	5%	1/6W
R279	1-259-464-11	CARBON	33K	5%	1/6W
R280	1-247-721-11	CARBON	4.7K	5%	1/4W
R281	1-259-406-11	CARBON	120	5%	1/6W
R282	1-259-452-11	CARBON	10K	5%	1/6W
R283	1-259-442-11	CARBON	3.9K	5%	1/6W
R284	1-259-406-11	CARBON	120	5%	1/6W
R285	1-259-452-11	CARBON	10K	5%	1/6W
R286	1-259-444-11	CARBON	4.7K	5%	1/6W
R287	1-249-782-11	CARBON	150	5%	1/6W
R289	1-259-436-11	CARBON	2.2K	5%	1/6W
R290	1-249-429-11	CARBON	10K	5%	1/4W
R291	1-249-429-11	CARBON	10K	5%	1/4W
R292	1-249-429-11	CARBON	10K	5%	1/4W
R293	1-249-432-11	CARBON	18K	5%	1/4W
R294	1-249-393-11	CARBON	10	5%	1/4W
R295	1-249-435-11	CARBON	33K	5%	1/4W
R296	1-259-480-11	CARBON	150K	5%	1/6W
R297	1-249-465-11	CARBON	47K	5%	1/4W
R298	1-247-725-11	CARBON	10K	5%	1/4W
R501	1-249-429-11	CARBON	10K	5%	1/4W
R502	1-249-437-11	CARBON	47K	5%	1/4W
R503	1-215-472-00	METAL	130K	1%	1/6W
R504	1-249-437-11	CARBON	47K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-429-11	CARBON	10K	5%	1/4W
R507	1-249-431-11	CARBON	15K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-437-11	CARBON	47K	5%	1/4W
R510	1-249-413-11	CARBON	470	5%	1/4W
R511	1-249-432-11	CARBON	18K	5%	1/4W

Ref.No.	Part No.	Description				
R512	1-249-433-11	CARBON	22K	5%	1/4W	
R513	1-249-417-11	CARBON	1K	5%	1/4W	
R514	1-249-437-11	CARBON	47K	5%	1/4W	
R516	1-249-433-11	CARBON	22K	5%	1/4W	
R517	1-249-437-11	CARBON	47K	5%	1/4W	
R521	1-249-425-11	CARBON	4.7K	5%	1/4W	
R522	1-249-425-11	CARBON	4.7K	5%	1/4W	
R523	1-249-437-11	CARBON	47K	5%	1/4W	
R524	1-249-437-11	CARBON	47K	5%	1/4W	
R525	1-249-437-11	CARBON	47K	5%	1/4W	
R526	1-249-435-11	CARBON	33K	5%	1/4W	
R527	1-249-439-11	CARBON	68K	5%	1/4W	
R528	1-249-429-11	CARBON	10K	5%	1/4W	
R529	1-249-425-11	CARBON	4.7K	5%	1/4W	
R530	1-249-437-11	CARBON	47K	5%	1/4W	
R531	1-249-437-11	CARBON	47K	5%	1/4W	
R532	1-249-433-11	CARBON	22K	5%	1/4W	
R533	1-249-433-11	CARBON	22K	5%	1/4W	
R551	1-215-472-00	METAL	130K	1%	1/6W	
R552	1-249-429-11	CARBON	10K	5%	1/4W	
R553	1-249-421-11	CARBON	2.2K	5%	1/4W	
R554	1-249-440-11	CARBON	82K	5%	1/4W	
R555	1-249-429-11	CARBON	10K	5%	1/4W	
R560	1-249-391-11	CARBON	6.8	5%	1/4W	
R561	1-249-391-11	CARBON	6.8	5%	1/4W	
R562	1-249-440-11	CARBON	82K	5%	1/4W	
R563	1-249-440-11	CARBON	82K	5%	1/4W	
R564	1-249-429-11	CARBON	10K	5%	1/4W	
R565	1-249-425-11	CARBON	4.7K	5%	1/4W	
R566	1-249-418-11	CARBON	1.2K	5%	1/4W	
R567	1-249-437-11	CARBON	47K	5%	1/4W	
R568	1-247-838-00	CARBON	2K	5%	1/4W	
R569	1-247-846-11	CARBON	4.3K	5%	1/4W	
R570	1-249-425-11	CARBON	4.7K	5%	1/4W	
R571	1-249-423-11	CARBON	3.3K	5%	1/4W	
R572	1-247-856-00	CARBON	11K	5%	1/4W	
R573	1-247-856-00	CARBON	11K	5%	1/4W	
R574	1-249-397-11	CARBON	22	5%	1/4W	
R575	1-249-406-11	CARBON	120	5%	1/4W	
R576	1-247-887-00	CARBON	220K	5%	1/4W	
R577	1-249-437-11	CARBON	47K	5%	1/4W	
R578	1-249-432-11	CARBON	18K	5%	1/4W	
R579	1-249-432-11	CARBON	18K	5%	1/4W	
R580	1-249-397-11	CARBON	22	5%	1/4W	
R581	1-249-406-11	CARBON	120	5%	1/4W	
R582	1-247-887-00	CARBON	220K	5%	1/4W	
R583	1-249-407-11	CARBON	150	5%	1/4W	
R584	1-249-427-11	CARBON	6.8K	5%	1/4W	
R585	1-249-381-11	CARBON	1	5%	1/4W	
R586	1-249-422-11	CARBON	2.7K	5%	1/4W	
R601	⚠1-212-863-00	FUSIBLE	18	5%	1/4W	F
R602	1-247-717-11	CARBON	2.2K	5%	1/4W	
R603	1-247-717-11	CARBON	2.2K	5%	1/4W	
R604	1-247-706-11	CARBON	330	5%	1/4W	
R605	1-249-556-11	CARBON	1.5K	5%	1/4W	
R606	1-249-556-11	CARBON	1.5K	5%	1/4W	
R607	1-247-717-11	CARBON	2.2K	5%	1/4W	

Ref.No.	Part No.	Description				
R608	1-249-926-11	CARBON	1.3K	5%	1/4W	
R609	⚠1-217-637-00	FUSIBLE	1	5%	1/4W	F
R610	1-249-417-11	CARBON	1K	5%	1/4W	
R701	1-249-425-11	CARBON	4.7K	5%	1/4W	
R702	1-249-429-11	CARBON	10K	5%	1/4W	
R703	1-249-431-11	CARBON	15K	5%	1/4W	
R704	1-249-425-11	CARBON	4.7K	5%	1/4W	
R705	1-249-421-11	CARBON	2.2K	5%	1/4W	
R706	1-249-421-11	CARBON	2.2K	5%	1/4W	
R707	1-249-421-11	CARBON	2.2K	5%	1/4W	
R708	1-249-427-11	CARBON	6.8K	5%	1/4W	
R709	1-249-425-11	CARBON	4.7K	5%	1/4W	
R710	1-247-752-11	CARBON	1K	5%	1/2W	
R711	1-249-429-11	CARBON	10K	5%	1/4W	
R712	1-249-421-11	CARBON	2.2K	5%	1/4W	
R713	1-249-437-11	CARBON	47K	5%	1/4W	
R714	1-249-425-11	CARBON	4.7K	5%	1/4W	
R715	1-249-421-11	CARBON	2.2K	5%	1/4W	
R801	1-247-887-00	CARBON	220K	5%	1/4W	
R802	1-247-887-00	CARBON	220K	5%	1/4W	
R803	1-249-436-11	CARBON	39K	5%	1/4W	
R804	1-249-436-11	CARBON	39K	5%	1/4W	
R805	1-249-429-11	CARBON	10K	5%	1/4W	
R806	1-249-435-11	CARBON	33K	5%	1/4W	
R807	1-249-429-11	CARBON	10K	5%	1/4W	
R808	1-249-429-11	CARBON	10K	5%	1/4W	
R809	⚠1-249-484-11	CARBON	6.8	5%	1/2W	F
R810	1-247-854-11	CARBON	9.1K	5%	1/4W	
R811	1-249-429-11	CARBON	10K	5%	1/4W	
R812	⚠1-249-484-11	CARBON	6.8	5%	1/2W	F
R813	1-249-429-11	CARBON	10K	5%	1/4W	
R814	1-249-429-11	CARBON	10K	5%	1/4W	
R815	1-249-425-11	CARBON	4.7K	5%	1/4W	
R816	1-249-413-11	CARBON	470	5%	1/4W	
R817	1-249-429-11	CARBON	10K	5%	1/4W	
R818	1-249-429-11	CARBON	10K	5%	1/4W	
R819	1-249-429-11	CARBON	10K	5%	1/4W	
R820	1-249-429-11	CARBON	10K	5%	1/4W	
R821	1-249-429-11	CARBON	10K	5%	1/4W	
R822	1-249-429-11	CARBON	10K	5%	1/4W	
R823	1-249-429-11	CARBON	10K	5%	1/4W	
R824	1-249-429-11	CARBON	10K	5%	1/4W	
R825	1-249-429-11	CARBON	10K	5%	1/4W	
R826	1-249-429-11	CARBON	10K	5%	1/4W	
R827	1-249-425-11	CARBON	4.7K	5%	1/4W	
R828	1-249-425-11	CARBON	4.7K	5%	1/4W	
R829	1-249-435-11	CARBON	33K	5%	1/4W	
R830	1-249-413-11	CARBON	470	5%	1/4W	
R832	1-247-903-00	CARBON	1M	5%	1/4W	
R833	1-249-417-11	CARBON	1K	5%	1/4W	
R834	1-249-425-11	CARBON	4.7K	5%	1/4W	
R835	1-249-435-11	CARBON	33K	5%	1/4W	
R836	1-249-440-11	CARBON	82K	5%	1/4W	
R837	1-249-435-11	CARBON	33K	5%	1/4W	
R838	1-249-437-11	CARBON	47K	5%	1/4W	
R839	1-249-435-11	CARBON	33K	5%	1/4W	
R840	1-249-435-11	CARBON	33K	5%	1/4W	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R841	1-249-429-11	CARBON	10K	5%	1/4W
R842	1-249-429-11	CARBON	10K	5%	1/4W
R843	1-249-429-11	CARBON	10K	5%	1/4W
R844	1-249-408-11	CARBON	180	5%	1/4W
R845	1-249-411-11	CARBON	330	5%	1/4W
R846	1-249-408-11	CARBON	180	5%	1/4W
R847	1-249-435-11	CARBON	33K	5%	1/4W
R848	1-249-435-11	CARBON	33K	5%	1/4W
R849	1-249-427-11	CARBON	6.8K	5%	1/4W
R901	1-249-441-11	CARBON	100K	5%	1/4W
R902	1-249-441-11	CARBON	100K	5%	1/4W
R903	1-249-441-11	CARBON	100K	5%	1/4W
R904	1-249-441-11	CARBON	100K	5%	1/4W
R905	1-249-441-11	CARBON	100K	5%	1/4W
R906	1-249-441-11	CARBON	100K	5%	1/4W
R907A	1-249-441-11	CARBON	100K	5%	1/4W
R907B	1-216-242-00	METAL GLAZE	68K	5%	1/8W
R908A	1-249-441-11	CARBON	100K	5%	1/4W
R908B	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R909A	1-249-441-11	CARBON	100K	5%	1/4W
R909B	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R910A	1-249-441-11	CARBON	100K	5%	1/4W
R910B	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R911A	1-249-441-11	CARBON	100K	5%	1/4W
R911B	1-216-182-00	METAL GLAZE	220	5%	1/8W
R912A	1-249-441-11	CARBON	100K	5%	1/4W
R912B	1-216-182-00	METAL GLAZE	220	5%	1/8W
R913A	1-249-441-11	CARBON	100K	5%	1/4W
R913B	1-216-150-00	METAL GLAZE	10	5%	1/8W
R914A	1-249-441-11	CARBON	100K	5%	1/4W
R914B	1-216-150-00	METAL GLAZE	10	5%	1/8W
R915A	1-249-441-11	CARBON	100K	5%	1/4W
R915B	1-216-150-00	METAL GLAZE	10	5%	1/8W
R916	1-249-441-11	CARBON	100K	5%	1/4W
R917	1-249-441-11	CARBON	100K	5%	1/4W
R918	1-249-441-11	CARBON	100K	5%	1/4W
R919	1-249-441-11	CARBON	100K	5%	1/4W
R920	1-249-441-11	CARBON	100K	5%	1/4W
R921	1-249-441-11	CARBON	100K	5%	1/4W
R922	1-247-903-00	CARBON	1M	5%	1/4W
R923	1-215-452-00	METAL	20K	1%	1/6W
R924	1-215-452-00	METAL	20K	1%	1/6W
R925	1-215-445-00	METAL	10K	1%	1/6W
R926	1-215-452-00	METAL	20K	1%	1/6W
R927	1-215-445-00	METAL	10K	1%	1/6W
R928	1-215-452-00	METAL	20K	1%	1/6W
R929	1-215-445-00	METAL	10K	1%	1/6W
R930	1-215-452-00	METAL	20K	1%	1/6W
R931	1-215-445-00	METAL	10K	1%	1/6W
R932	1-215-452-00	METAL	20K	1%	1/6W
R933	1-215-445-00	METAL	10K	1%	1/6W
R934	1-215-452-00	METAL	20K	1%	1/6W
R935	1-215-445-00	METAL	10K	1%	1/6W
R936	1-215-460-00	METAL	43K	1%	1/6W

Ref.No.	Part No.	Description			
R937	1-215-425-00	METAL	1.5K	1%	1/6W
R938	1-249-429-11	CARBON	10K	5%	1/4W
R939	1-249-409-11	CARBON	220	5%	1/4W
R940	1-249-429-11	CARBON	10K	5%	1/4W
R941	1-249-429-11	CARBON	10K	5%	1/4W
R942	1-249-422-11	CARBON	2.7K	5%	1/4W
R943	1-249-424-11	CARBON	3.9K	5%	1/4W
R944	1-249-428-11	CARBON	8.2K	5%	1/4W
R945	1-249-434-11	CARBON	27K	5%	1/4W
R946	1-249-422-11	CARBON	2.7K	5%	1/4W
R947	1-249-424-11	CARBON	3.9K	5%	1/4W
R948	1-249-428-11	CARBON	8.2K	5%	1/4W
R949	1-249-434-11	CARBON	27K	5%	1/4W
R950	1-249-427-11	CARBON	6.8K	5%	1/4W
R951A	1-249-428-11	CARBON	8.2K	5%	1/4W
R951B	1-249-413-11	CARBON	470	5%	1/4W
R952A	1-249-425-11	CARBON	4.7K	5%	1/4W
R952B	1-249-413-11	CARBON	470	5%	1/4W
R953A	1-249-429-11	CARBON	10K	5%	1/4W
R953B	1-247-881-00	CARBON	120K	5%	1/4W
R954A	1-249-429-11	CARBON	10K	5%	1/4W
R954B	1-247-881-00	CARBON	120K	5%	1/4W
R955A	1-249-425-11	CARBON	4.7K	5%	1/4W
R955B	1-249-429-11	CARBON	10K	5%	1/4W
R956A	1-249-425-11	CARBON	4.7K	5%	1/4W
R956B	1-249-417-11	CARBON	1K	5%	1/4W
R957	1-249-417-11	CARBON	1K	5%	1/4W
R958	1-247-891-00	CARBON	330K	5%	1/4W
R959	1-247-901-11	CARBON	820K	5%	1/4W
R960	1-249-441-11	CARBON	100K	5%	1/4W
R1001	1-249-408-11	CARBON	180	5%	1/4W
R1002	1-249-408-11	CARBON	180	5%	1/4W
R1051	1-249-412-11	CARBON	390	5%	1/4W

RV101	1-228-993-00	RES, ADJ, CARBON 5K
RV131	1-228-995-00	RES, ADJ, CARBON 22K
RV151	1-228-994-00	RES, ADJ, CARBON 10K
RV152	1-228-993-00	RES, ADJ, CARBON 4.7K
RV153	1-228-995-00	RES, ADJ, CARBON 22K
RV201	1-228-993-00	RES, ADJ, CARBON 5K
RV231	1-228-995-00	RES, ADJ, CARBON 22K
RV251	1-228-994-00	RES, ADJ, CARBON 10K
RV252	1-228-993-00	RES, ADJ, CARBON 4.7K
RV253	1-228-995-00	RES, ADJ, CARBON 22K
RV541	1-238-085-11	REA, VAR, CARBON 20K/20K(PHONE LEVEL)
RV551	1-238-687-11	RES, VAR, CARBON 50K/50K(BALANCE)
RV552	1-238-833-21	RES, VAR, CARBON 20K/20K(REC LEVEL)
RV553	1-238-832-11	RES, VAR, CARBON 5K/5K (REC LEVEL)
RV561	1-238-834-11	RES, VAR, CARBON 5K/5K (BIAS)
RV571	1-230-504-11	RES, ADJ, CARBON 220
RV572	1-230-504-11	RES, ADJ, CARBON 220
RV573	1-228-993-00	RES, ADJ, CARBON 4.7K
RV574	1-228-996-00	RES, ADJ, CARBON 47K
RV803	1-228-993-00	RES, ADJ, CARBON 4.7K

Ref.No.	Part No.	Description
S521	1-572-153-11	SWITCH, PUSH (1 KEY)(CD DIRECT)
S522	1-572-154-11	SWITCH, ROTARY (DOLBY NR)
S523	1-572-152-11	SWITCH, PUSH (3 KEY) (MPX FILTER/HXPRO/CALIBRATION)
S701	⚠1-570-103-21	SWITCH, PUSH (1 KEY)(POWER)
S801	1-516-781-XX	SWITCH, SLIDE (TIMER)
S901	1-554-303-21	SWITCH, KEY BOARD (COUNTER RESET)
S902	1-554-303-21	SWITCH, KEY BOARD (COUNTER MEMORY)
S903	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S904	1-554-303-21	SWITCH, KEY BOARD (■)
S905	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S906	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S907	1-554-303-21	SWITCH, KEY BOARD (●)
S908	1-554-303-21	SWITCH, KEY BOARD (▶)
S909	1-554-303-21	SWITCH, KEY BOARD (❚❚)
S910	1-554-303-21	SWITCH, KEY BOARD (⏮)
S911	1-554-303-21	SWITCH, KEY BOARD (⏭)
S912	1-554-303-21	SWITCH, KEY BOARD (O)
S913	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)
S914	1-554-303-21	SWITCH, KEY BOARD (MONITOR)
S1001	1-466-238-11	ENCODER, ROTARY
S1002	1-570-953-11	SWITCH, PUSH (1 KEY)(DOOR)
S1003	1-571-958-11	SWITCH, PUSH (1 KEY)(CLOSE)
S1004	1-572-126-11	SWITCH, PUSH (1 KEY)(OPEN)
S1005	1-572-125-11	SWITCH, LEAF (FWD)
S1006	1-572-202-11	SWITCH, LEAF (HALF)
S1007	1-572-125-11	SWITCH, LEAF (METAL)
S1008	1-572-125-11	SWITCH, LEAF (70M)
T151	1-433-360-11	TRANSFORMER, BIAS OSCILLATION
T251	1-433-360-11	TRANSFORMER, BIAS OSCILLATION
T561	1-433-359-11	TRANSFORMER, BIAS OSCILLATION
T701	⚠1-449-985-11	(US,Canadian)...TRANSFORMER, POWER
T701	⚠1-449-986-11	(WG,UK).....TRANSFORMER, POWER
T701	⚠1-450-065-11	(E).....TRANSFORMER, POWER
TB1001	*1-569-066-11	PIN, CONNECTOR 5P (4.934MHz)
VS701	⚠1-570-307-11	(E)....SWITCH, VOLTAGE CHANGE
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)
X901	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)
X951	1-577-615-11	VIBRATOR, CRYSTAL (4.934MHz)

ACCESSORY & PACKING MATERIAL

1-465-314-11	(E)...REMOTE COMMANDER (RM-J701)
2-181-754-01	(E)...COVER, BATTERY (FOR RM-J701)
1-551-734-11	CORD, CONNECTION (RK-74A)
3-703-450-01	(US)...INSTRUCTION
3-704-366-01	(WG,K850ES:E)...SCREW (CASE) (M3X8)
*3-350-463-01	(US,Canadian,UK,K222ESG)...CUSHION
*3-356-960-01	(WG,K850ES:E).....CUSHION
*3-350-464-31	(US,Canadian,UK)...INDIVIDUAL CARTON
*3-350-464-41	(K222ESG).....INDIVIDUAL CARTON
*3-354-919-11	(WG,K850ES:E).....INDIVIDUAL CARTON
3-751-089-11	(Canadian,WG,UK,E)...MANUAL, INSTRUCTION
3-751-089-21	(US).....MANUAL, INSTRUCTION
3-751-764-11	(E)....MANUAL, INSTRUCTION
*3-703-710-41	STICKER, SONY SYMBOL (12)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.